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AN INVITATION TO YOU

The AMERICAN BUILDER cordially invites and urges you to enjoy the privileges and benefits of its Correspondence Department. Any phase of any building question may be profitably and instructively discussed in this department. If your problem is a knotty or technical one submit it to the Correspondence Department and secure the benefits of the opinions of other experienced builders. It's a "give" as well as a "take" department and you are asked to relate your achievements and tell how you have conquered difficulties as well as to ask for information and advice. Rough drawings are desired, for they make clear involved points. We will gladly work over the rough drawings to meet publication requirements. The Correspondence Department is your department. Use it freely and frequently.

Why Architects,
Contractors and
Dealers
Recommend

Andersen FRAMES

1. Immediate delivery—no expensive delays waiting for special custom made frames.
2. 121 sizes ready for every purpose.
3. Delivered in two compact bundles plainly marked and easily handled.
4. 7 parts instead of 57. No small parts to be lost or broken.
5. A frame up in ten minutes. No sorting, measuring or refitting. Pockets and pulleys in place.
6. Accuracy gives smooth-running windows, yet excludes all weather.
7. Modern machinery, methods and specialization lowers cost at factory; quickness of assembly saves you time, labor and money on the job.
8. Better results in frame, brick or stucco buildings.
9. White Pine preserves original accuracy and gives continuous service.
10. Made by the largest exclusive standard frame manufacturer. The trade-mark is absolute protection.



Courtesy White Pine Bureau.

Choose Frames That Resist Time and Weather

NOTICE the good condition of the window frames in America's oldest houses. They are almost perfectly preserved after many years of constant exposure.

The durability you see in these old houses is due to their White Pine construction. This same long life is built into Andersen Frames, because all exposed portions are made of the wood which lasts for centuries.

In addition to giving continuous service, White Pine preserves the original accuracy of Andersen Standard Frames. Because the wood will not warp, shrink, crack or rot, windows run smoothly and yet fit snugly enough to exclude all weather.

Send For Free Booklet

Write to us and learn of the other economies that go with Andersen White Pine Frames. Please tell whether you are building your own home, or whether you are interested as an Architect, Contractor, Carpenter or Dealer.

Andersen Lumber Company
Dept. A-8 Bayport, Minnesota

Andersen FRAMES

FRIENDLY CHATS *with* EDITOR



Conserve Lumber by Using Odd and Short Lengths

THE extent to which odd and short lengths of lumber will in the future be utilized is something which the ultimate consumer must settle. If the consumer demands sizes other than long lengths and will order them in such quantity as to make it profitable for the retailer to handle them, no doubt there will be an increased production of such sizes. Lumber manufacturers are interested in the inclusion of more odd and short lengths in shipments. On the other hand, the retailer, the wholesaler, and to some extent, large consumers, object.

It is almost criminal to trim off perfectly good lumber that naturally grows in long lengths. It is poor business to make a big discrimination in price in favor of short lengths, and to refuse to manufacture odd lengths. Let's change the habit.

The problem is not one of manufacturing, but of marketing. If the architect and contractor and builder demand odd and short lengths the dealer will supply the demand.

The question is, then, to what extent can the builder advantageously use odd and short lengths? If architects and builders and any users of lumber in all sections of the country will figure the percentage of short and odd lengths that may be used in average construction, and write these in to AMERICAN BUILDER, we will see that the information is placed in the hands of the Practical Size Investigating Committee of the National Lumber Manufacturers Association, Chicago. Or, you may write them direct.

This is practical, constructive conservation of lumber resources.



Rarer Than a Gobelin Tapestry

WE were in a home recently where our eyes were attracted by a handsome border around the living room walls where they met the ceiling. Drawing nearer for a better inspection we saw that this border consisted of—names.

James, Robert, Henry, Fred, John, Leslie, Sam, Sarah, Joan, Mary, Hortense, Eleanor—there they

were, and many others. A few blank spaces remained, but these had been allowed for in such a way that the balance of the border design was not affected.

When we asked what these signified we were told that these were the names of esteemed neighbors and friends. The owner and his wife, having a bit of a knack that way, lettered those names in Old English script, with illuminated initial letters, and the work represented the loving labor of odd moments over a term of years. Black and colors and gold made each name a gem—beautiful.

That is the kind of a room which can exist only in a home. We can imagine that only names that have proved themselves as belonging to someone loved and tried and true will find a place in that sacred garland. That is the room in which you can imagine visitors just dropping in to "set" awhile in the good, old-fashioned way. The owner of the house is not money-wealthy, but he has that in his home which is rarer than the most priceless Gobelin tapestry that ever graced a palace wall.



Modernize Our Municipal Libraries

MUCH of the American business man's success is due to his ability to think out and find the shortest distance between two points. Much of his daily profit comes from routing his product through his plant so it will traverse no labyrinthine course, but go in the factory door and out to the shipping platform without delay, duplication of effort or handling, or side-tracking for less productive material. Everything is in its place, and reached easily.

Why not apply this to our municipal libraries?

The architect must conceive of the municipal library, not as an opportunity for the exercise of otherwise inhibited architectural fancy, but as a vast service institution, whose books are not to be walled and shelved out of reach, but made easy of access to old and young. He should take a leaf out of the book of modern merchants, and put in display windows and ground level entrances, and see that the books, the library's wares, are displayed where all may see, choose quickly and be served with dispatch.



AN EXAMPLE OF GOOD ARCHITECTURE:

Modern Colonial Entrance
 NEEDHAM PUBLIC LIBRARY
 NEEDHAM . . . MASS.
 James H. Ritchie, Architect
 Boston . . . Mass.

Building and Loan Associations

The Why and Wherefore of This Typical American Aid Toward Financing and Owning a Home

By Frank A. Chase

THROUGH the maintenance of good, local, mutual Building and Loan Associations many communities permanently finance their home-building, home-buying, home-repairing requirements, at the same time training in thrift and business habits a large clientele who might otherwise fail to save money. This co-ordination of saving and financing gives a Building and Loan Association its two reasons for existence, for the savings of the many, accumulated in the Association, provide the funds needed for building and buying homes.

Begun in Philadelphia in 1831, the Building and Loan Association movement not only made Philadelphia a city of homes, but has extended throughout the country until today there are over 20,000,000 people directly interested in the movement, with accumulated savings amounting to more than \$3,000,000,000.

No other organization is so primarily intended for this matter of home financing. At the same time, through its co-operative management and minimum expense, it is enabled to pay its savings members a maximum interest or dividend return, with a degree of safety not exceeded by any other form of investment offered the American public.

Its privileges are, in the main, restricted to its own members. These favorable privileges include the loan of a larger percentage of the value of a given piece of property than is otherwise available, with an amorti-



Editor's Note: In his capacity as Educational Director, American Savings, Building and Loan Institute, Kansas City, Mo., Mr. Chase has not only assisted in the organization of over fifty Building and Loan Associations, but has addressed numberless Leagues and Conventions, twelve Universities and Colleges, fifty-nine High Schools, forty Grade Schools and forty-six Chambers of Commerce. He is therefore an authority on the work of Building and Loan Associations and we are glad to present this article from his pen.

zation plan of periodical payment of interest, and either a direct application of an additional payment toward the reduction of the particular loan, or the creation of a sinking fund through the deposits of weekly or monthly dues upon shares of stock in such an association, the maturity of which shares is applied to the cancellation of the loan. Borrowing members of the association are usually accorded greater consideration in the event of misfortune than where the borrower has obtained money from other sources.

The capital of a Building and Loan Association is represented by "shares" of a stated par or maturity value,—usually one hundred or two hundred dollars each. The authorized capital of the Association becomes subscribed capital as subscriptions for shares are received and payments made thereon. Such payments, together with the earnings thereon, constitute the paid-up capital or real capital of an Association.

Membership in general is coincident and coextensive with the individual subscription for shares, subject to such restrictions as may be adopted by the Association, and to such restrictions as the law provides with regards to minors and corporations

in the matter of holding shares. This mutual nature extends to participation, by the members, in the control of the Association,—excepting those members who may be legally incompetent. This control is exercised

(Continued to page 104.)

Safe and Speedy Figuring

Along with the Rest of the Business World Architects and Builders and Building Material Dealers Are Realizing the Speediest Possible Methods of Handling Figure-Work

By T. O'DONNELL

A SHORT time ago two men were bidding on a house. Both, naturally, had fully concluded their figures were correct, but when the bids were opened one was \$1,580 high, and the high man lost the contract. At home that night the loser decided to re-figure the job and see where any such difference could be, and in again going over the figures found the error.

After considering the situation and deciding that the human mind is, after all, fallible, he decided to look over the calculating machines designed to care for just such work. Buying one, he soon found out that he had secured much more than the assurance of accuracy; he had reduced the time required to do his figure-work to an astonishing degree. Work that had taken hours and hours to do, often running away into the night, could be turned out easily and without fatigue in from one to three hours.

Modern business life is geared so high that there is no place for old, plodding methods in the daily activities of those who wish to keep up with the procession. The typewriter, the telephone, the radio and the gasoline motor have set such a pace that it is necessary to speed up or be left behind.

So many and involved are the cost computations and the formulae which the architect and builder and building material dealer must compute in connection with their work that they have readily accepted in the past all the help they could find in the way of handbooks, tables, mechanical computing appliances and slide rules to save their brain power for really constructive work. Yet, though the slide rule has enjoyed an extensive use, only approximate values can be determined by it. The

placing of the decimal point often gives difficulty; and while using the slide rule the user must carry some governing factor in his mind. Where more exact results than those reached by the slide rule are desired, tables

of logarithms to seven or eight places are used. But this is a slow process.

Success or failure depends upon the ability to estimate accurately, and the accuracy of the estimate, in turn, depends upon practical cost methods from which reliable unit rates can be obtained. It is obvious that our builder above referred to made a serious error in the computing of unit costs, losing a contract because his price was too high. What would have been very much worse would be the making of errors which make his figure so low that it would be impossible for him to do the work without sustaining a loss.

Architects, builders, contractors and building material dealers need a calculating machine which will not only solve any computation in the architectural and engineering field, including the extraction of square and cube roots, but which will do all the figure-work of their daily business simply and speedily without any noticeable degree of eye or mental strain, and with an absolute assurance of accuracy.

One large construction firm which comes to mind uses a calculating machine for its calculating work in general, and in the case of multiplying and dividing of large figures does this labor mechanically in a way which insures accuracy and saves many hours a week.

One make of calculator utilizes a two-way mechanism which makes it possible to handle subtraction and division with the same ease and directness as addition and multiplication. An extra set of dials also fur-



Louis Clousing, Building Inspector in the Engineers' Department, City of Minneapolis, Finds the Figuring Machine an Office Necessity in Checking Plans and Specifications.

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Figuring Machines Are Used in the Construction and Highway Departments of Forty States and Show the Way to Equally Satisfactory Results When Used by the Individual Architect, Builder and Contractor.

nishes a visible proof of accuracy. Thus, in multiplication, the operator has before him both the multiplier and the multiplicand, as well as the result.

A very interesting test was recently made by the engineering department of Wayne County, Mich. Before purchasing a calculating machine a test was made on a given problem. It was first solved by the ordinary arithmetical method, then by logarithms, and finally on the calculating machine. The time required by the ordinary pencil and paper method was one hour and twenty-three minutes, including the necessary checking. By logarithms the work required twelve minutes. With the calculating machine it was done in three minutes. In other words, the machine showed a gain of 400 per cent in time saved over the use of logarithms, and a gain of 2,366 per cent over the ordinary arithmetical method. It might be added that even with the checking, an error was subsequently discovered in the pencil figuring when the problem was done on the calculating machine.

The Department of Building Inspection of the City of Minneapolis uses a calculating machine to check figure-work in connection with plans and specifications of proposed buildings. All plans are examined as to correct structural design and ordinance requirements. Louis C. Clousing, department engineer, states that on this work he uses a calculating machine for the computations made to determine the safe allowable loads and stresses for all types of building construction, such as timber, masonry, reinforced concrete and structural steel. He formerly used a great number of charts giving values and areas of materials, but running these same values off on a calculating machine requires less time than it does to pick out the particular chart desired and read the result.

The Department of Public Works of the State of

Idaho uses calculating machines, and estimates that each machine helps effect a minimum saving of \$100 a month, compared to what the work would cost if done by hand. Last summer when there was a shortage of help, a stenographer, at the end of a few days' instruction, was able to perform accurately and quickly on a calculating machine all the computations relative to estimate work on the Department's highway projects.

Though it might be mentioned that about 40 states use calculating machines in their various construction departments, the simplicity, speed and assured accuracy of a modern figuring machine means quite as much to the individual architect, builder or contractor as it does to a large organization. Frequently the latter must do their estimating and other figuring at night when they are tired, and consequently very apt to make errors.

Today, under the highly competitive conditions which exist, and the scarcity of suitable help, a calculating machine is a necessity in the office of the architect, builder or contractor. Its time-saving and error-eliminating features make it a piece of equipment which is exceedingly useful, and it requires very little using to turn it into a profitable investment.



Lumber Shippers Not Required to Bulkhead Cars Hereafter

THE practice of various Southern railroads of requiring lumber shippers to "bulkhead" open cars when used for carrying lumber, which entailed considerable extra expense, has been abolished.

"Bulkheading" means the construction of what is practically a boxcar end on the open car in addition to the usual car stakes and strips along the sides and top. The practice cost the lumber manufacturer from \$19 to \$23 per car in addition to the other shipping charges.



Extending from Franklin Square, Philadelphia, to Pearl Street, Camden, This Mammoth Bridge Crosses the Delaware with a Single Span 1,750 Feet Long, Center to Center of the Main Piers and Towers. The longest single span in the world, save one.

The New Delaware River Bridge

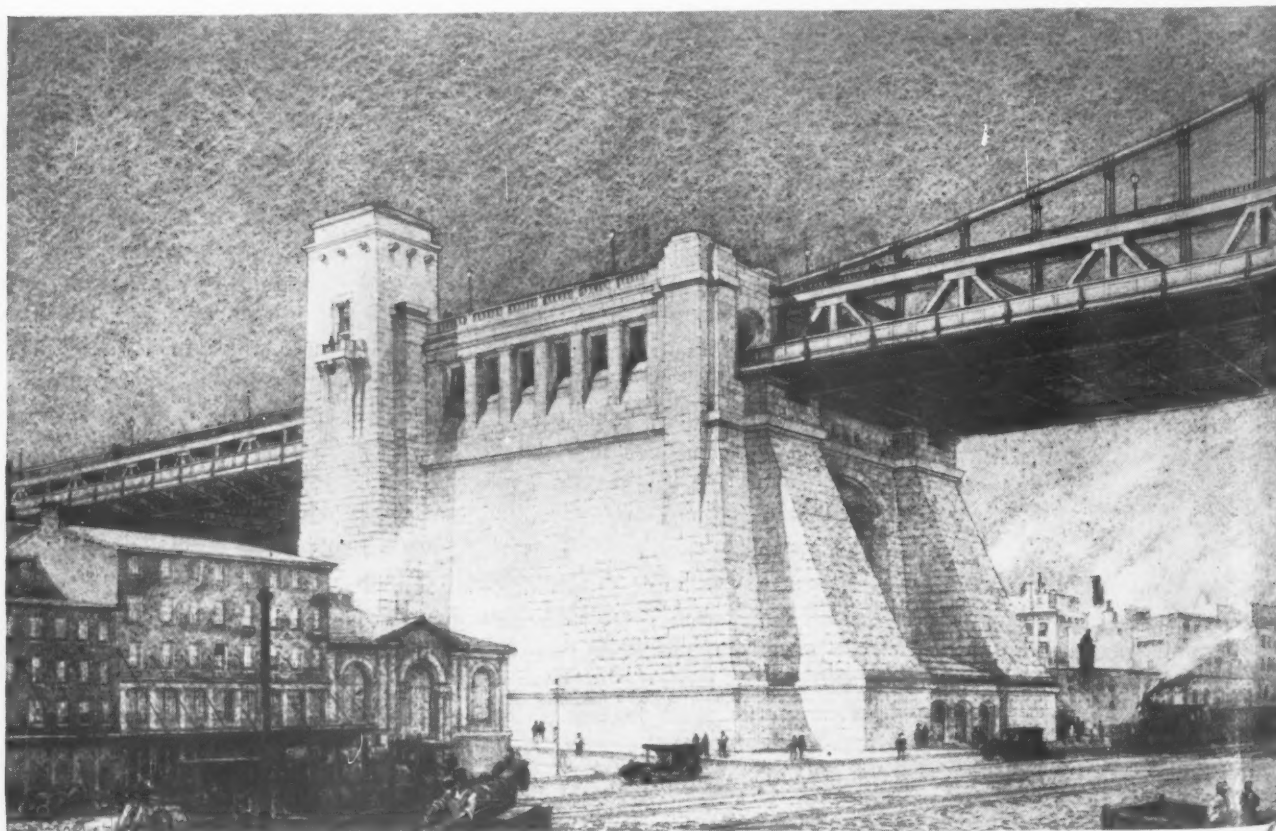
By ROBERT F. SALADE

MANY remarkable features will be possessed by the new bridge which is now being erected across the Delaware River from the City of Philadelphia to Camden, New Jersey. The estimated cost of this structure is \$28,871,000, to be distributed as follows: State of Pennsylvania, \$8,221,000; State of New Jersey, \$12,429,000, and the City of Philadelphia, \$8,221,000.

The new bridge and its approaches will extend from Franklin Square, Philadelphia, to Pearl Street, Camden. At each end of the bridge will be a beautiful

plaza with wide roadways radiating from the main roadway at each end of the bridge.

This mammoth bridge will cross the Delaware River with a single span 1,750 feet long, center to center of the main piers and towers. It will be the longest single span of its kind in the world with one exception. The main structure will be of a two-cable suspension type. The overhead clearance above mean high water will be 135 feet over a width of 800 feet in the center of the span. This high elevation will allow the great battleships stationed at League Island, Philadelphia, and the



The Anchorage Will be of Stone and Concrete. The main roadway on the bridge will be paved with slabs of reinforced concrete, and the footway will be paved with wood blocks. The railroad tracks will rest on steel ties. The whole structure will be fireproof.

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During the Past Year More Than 48,000,000 People Crossed the Delaware on the Ferries from Philadelphia to Camden. It is expected that by the time this bridge is completed 50,000,000 persons will cross this bridge yearly.

largest ocean steamers to pass under the span of the bridge without difficulty.

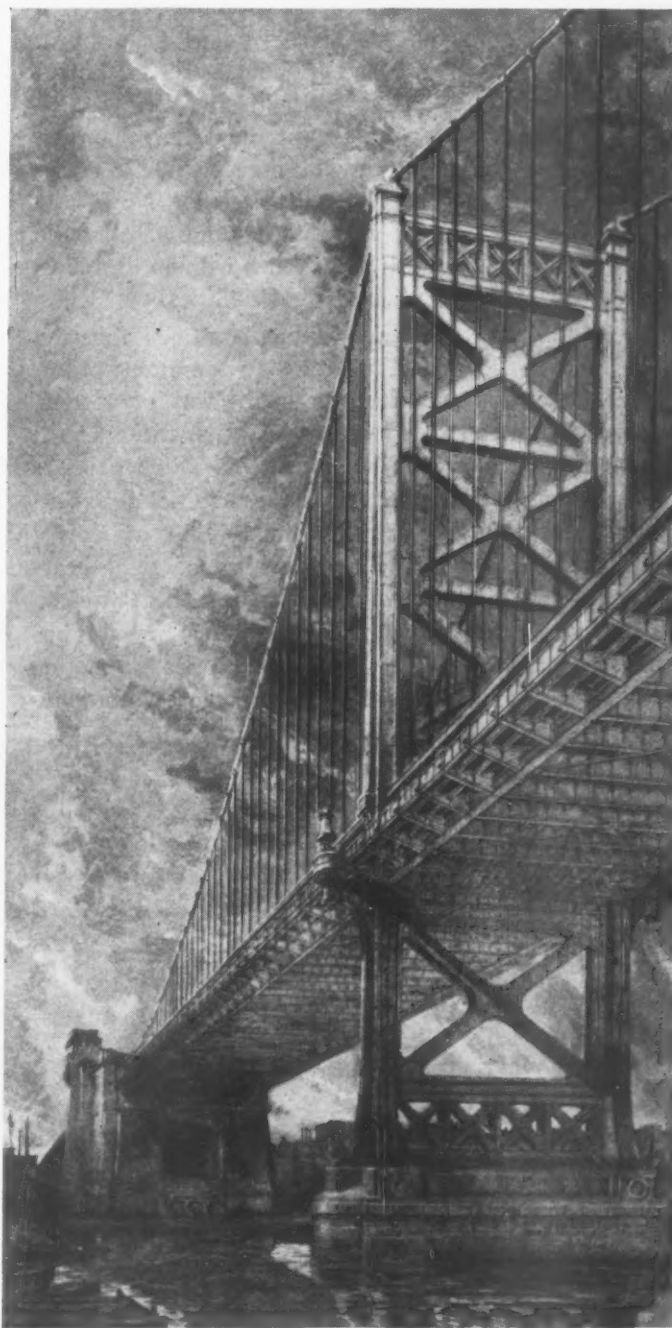
Among the most notable features of this bridge will be the two suspension cables, each one measuring 30 inches in diameter. Each one of these cables will be formed of 16,531 single wires, made up into 61 strands, bound together and wrapped with serving wire. The single wires in the cables will be of the finest quality high carbon steel, galvanized, and 0.192 inch in diameter.

At intervals of $20\frac{1}{2}$ feet, measured horizontally, a circumferential cast steel saddle will be fastened to the cable, over which will be hung four galvanized wire ropes, $2\frac{5}{8}$ inches in diameter, to carry the suspended structure. The cables will rest on cast steel saddles on the two tall towers and at the anchorages. Back of the anchorage saddles the end of the cables will be fastened to anchor chains to be embedded in the mass of the anchorage masonry. More than 90,000 cubic yards of masonry will be required.

The foundation caissons of the two main piers—the piers which will support the towers—will be sunk to bed rock at the bottom of the river. The air locks being used for sinking the foundations are provided with emergency hospitals to give first aid to workmen who may suffer from "the bends," a disease peculiar to persons who work under the heavy air pressure that is maintained in the air locks. This work is dangerous, and the men can work in these locks for only short periods at a time.

The two great towers which will hold up the cables will be of steel, and will rise to a height of 380 feet above the level of the river. The legs of these towers will be 12 feet wide at the top, widening to 40 feet at the base.

The main roadway will measure 57 feet from curb to curb, and there will also be two tracks for surface cars and two tracks for rapid transit lines. Above the main roadway, on each side, will be sidewalks for pedestrians each walk 10 feet wide. The total width will be 125 feet. Each anchorage at the end of the bridge will be provided with four passenger elevators to connect the foot-walks and the surface car stations with the street level.



The Bridge is of Simple But Beautiful Design, and a Total of 33,000 Tons of Steel Used. It is expected to have it completed July 4, 1926, for the Sesquicentennial of the Declaration of Independence at Philadelphia "World's Fair."

"Re-pair-Re-build-Re-roof Now!"

Delays Never Pay

THE J. H. Patterson Lumber Company has a manager at its Freeport, Ill., branch who possesses a keen merchandising instinct. Most of the architects, builders, contractors and carpenters thereabouts know him as "Charlie" Hogan—the kind of executive who can be depended on to get their material as specified delivered to them when they want it.

He is always alert for new ways to serve them.

One of the leading manufacturers of roofing gave him his latest—and, as it developed, his best hunch. When he received their letter about a new campaign they were sponsoring with the slogan "Re-pair—Re-build—Re-roof Now!" he immediately figured that he was in touch with an idea having big possibilities.

A Timely Slogan That Excites Action.

Without waiting for the generous co-operation promised him by this manufacturer in the way of posters, colored streamers, door hangers, booklets, stickers, etc., he went right ahead on his own hook. Sign painters and printers were set to work on material that featured the slogan "Re-pair—Re-build—Re-roof Now!" The yard office was one great display of signs bearing this slogan, from ground to roof. The Patterson trucks were dressed with 10 by 40-inch metal signs and became impressive moving billboards promoting this big idea as they rushed here and there with deliveries of building material.

Strange as it may seem in these days of prohibition, there was an unused lemonade stand in Freeport's park, and Mr. Hogan persuaded the municipal park board to allow him to use it for a booth to add greater punch to his drive. He staged an attractive display, and passed out samples and literature to all who visited the park. All park-bound street cars carried posters on the fender, encouraging property owners to protect their investment by repairing now while weather and prices are favorable. Freeport in general was pretty well covered with one form of advertising or another during the J. H. Patterson Company's campaign.

What was the result?

Already Mr. Hogan announces a marked increase in his sales, especially for materials needed for repairing. The stimulated demand helped an increase of turnover; you cannot even find odds and ends. Augmented with a supply of other campaign literature sent to him by the interested manufacturer who first promoted the "Re-pair—Re-build—Re-roof Now!" idea, he still carries on the campaign in Freeport for the J. H. Patterson Lumber Company. It continues to gain force daily, and they are assured a bigger fall business all around.

This is a good timely campaign idea for all building material supply dealers to tie to. It is good, too, for the alert contractors, builders and carpenters of the community. These latter are really the best selling force the building material supply dealer can have; they are the men who not only use his material, but specify its use. They know just how to give practical application of the slogan "Re-pair—Re-build—Re-roof Now!" A building material supply dealer is indeed fortunate if he can depend on their co-operation to give him the benefit of their personal canvass of the property owners in their community.

Big headline editorials are now appearing in the popular weekly farm papers, daily newspapers and leading magazines whose pages are devoted to encouraging home building—unanimously endorsing the stimulus to repair, rebuild, reroof *NOW*. For the next sixty days these editorials promise to be feature news items.

This is good timely advertising for alert contractors, builders and carpenters who will capitalize this favorable publicity by making—without delay—a personal



The Yard Office of the J. H. Patterson Lumber Company, Freeport, Ill., Was One Great Display of the "Re-pair, Re-build, Re-roof Now" Slogan. Even the trucks became moving billboards that carried the slogan everywhere.



The Result of the "Re-pair, Re-build, Re-roof Now" Campaign Was a Marked Increase in Business for the J. H. Patterson Company, Just as It Has Been for Other Firms Which Followed Suit.

canvass of the property owners in their vicinity. That there is much need for long postponed repair work is evident on every hand. Many of these desirable prospects once their attention is favorably gained to the wisdom and profit of no longer delaying necessary repairs will probably show added interest by having that long planned extra porch or built-on kitchen added at the same time. Again—that leaking roof will come in for its share of needed attention.

With both weather and prices now so favorable impetus to this "Re-pair—Re-build—Re-roof NOW!" campaign will be gained in proportion to the effort that carpenters, contractors and builders will put forth in stimulating this activity in their neighborhood.

Much Need for Long-Delayed Repair Work

That there is much need for long-postponed repair work is evident on every hand. The farmer needs to be convinced that it will be most profitable for him to "Re-pair—Re-build—Re-roof Now!" before the crops are housed. The householder will see the advisability of adding that long-delayed extra sun or sleeping porch or extension to the kitchen and having that leaky roof come in for its share of attention. After all, what can possibly demand more prompt attention than a leaky roof, with its imminent damage to walls and interior furnishings generally?

A better insulated and protected chicken coop or hog house means the saving of the lives of a few hens or a hog or two. Spread this over even one state's area and see the immediate benefit. A few rolls of roofing applied to the leaky implement shed means dollars made because of dollars saved in forestalling machinery deterioration.

Now we can expect efficient action on that fence; a roll of fence wire or poultry netting to keep out marauders and help the appearance of the place. Maybe the fence needs only a few lengths of dimension lumber.

and profit for the ones who give it the push, and see that it keeps moving.



Laying Oak Flooring

THE laying of oak flooring is not difficult. Any first-class carpenter can make a good job. Some judgment and care are necessary in order to produce the best results.

A sub-floor should be used under the 13/16, 3/8 and 1/2-inch thicknesses.

The sub-floor in new houses should be reasonably dry and laid diagonally. Shiplap of 6-inch or 8-inch width is preferred. This should not be put down too tight and should be thoroughly dried and cleaned before the oak flooring is laid.

It is well to use dampproof paper between the oak flooring and the sub-floor. Do not use ordinary building paper or rosin sized paper. The quantity required is small, and the very best quality of damp proof stock should be used. Where sound proof results are desired a heavy deadening felt is recommended.

It is very important to leave about 1/2 inch space on all sides between the oak floors and the base board to allow for expansion in event any dampness later gets into the oak flooring. This opening is covered by the quarter-round or base moulding.

Oak flooring should be laid at right angles to the sub-floor in old houses. After laying and nailing three or four pieces, use a short piece of hardwood 2 by 4 placed against the tongue and drive it up. Care should be taken in driving up 3/8-inch flooring not to break the tongue, which is fragile. Also do not drive up excessively tight. The nailing of oak flooring is very important. All tongued and grooved oak flooring should be blind nailed. For 13/16-inch use 8 penny cement coated flooring brads. For 3/8-inch use 3 penny cement coated finishing nails.

Perhaps all the porch foundation needs to correct that unsightly sagging of the porch floor is a few dozen bricks or a sack of cement. A few nails here—a coat of paint there—and a ramshackle thing looks shipshape again. It is easy to see where every element entering into building receives an impetus which means profitable action for everyone concerned.

After seeing what Manager Hogan helped the J. H. Patterson Lumber Company do for Freeport, Ill., we have become sold on the idea that "Re-pair—Re-build—Re-roof Now!" is destined to accomplish the unbelievable. An idea like this is not a hot potato—to be dropped hastily because u n m a n a g e a b l e. Rather it is like a snowball going down hill. It gathers momentum

From Theatre to Garage

Idea Used Successfully at Binghamton, N. Y., Lights Way to Making Most of Similar Opportunities Elsewhere

AN old moving picture theatre has been successfully converted into a modern garage in Binghamton, N. Y., and the result is so satisfactory that it is likely that many old theatres scattered throughout the country could well be put to similar use. This idea is confirmed by the fact that the Old Grand Theatre, located in the heart of Seattle, is being made into a five-story garage. Both these buildings, by the way, have d'Humy Motoramps.

The problem of parking cars is a pressing one in all cities. At the same time, suitable plots for the erection of new garages are often difficult to find. On the other hand, in most of these cities there are theatres that have grown out of date and are no longer used. These buildings are invariably ideally located in the heart of the city and consequently are suitable for conversion to

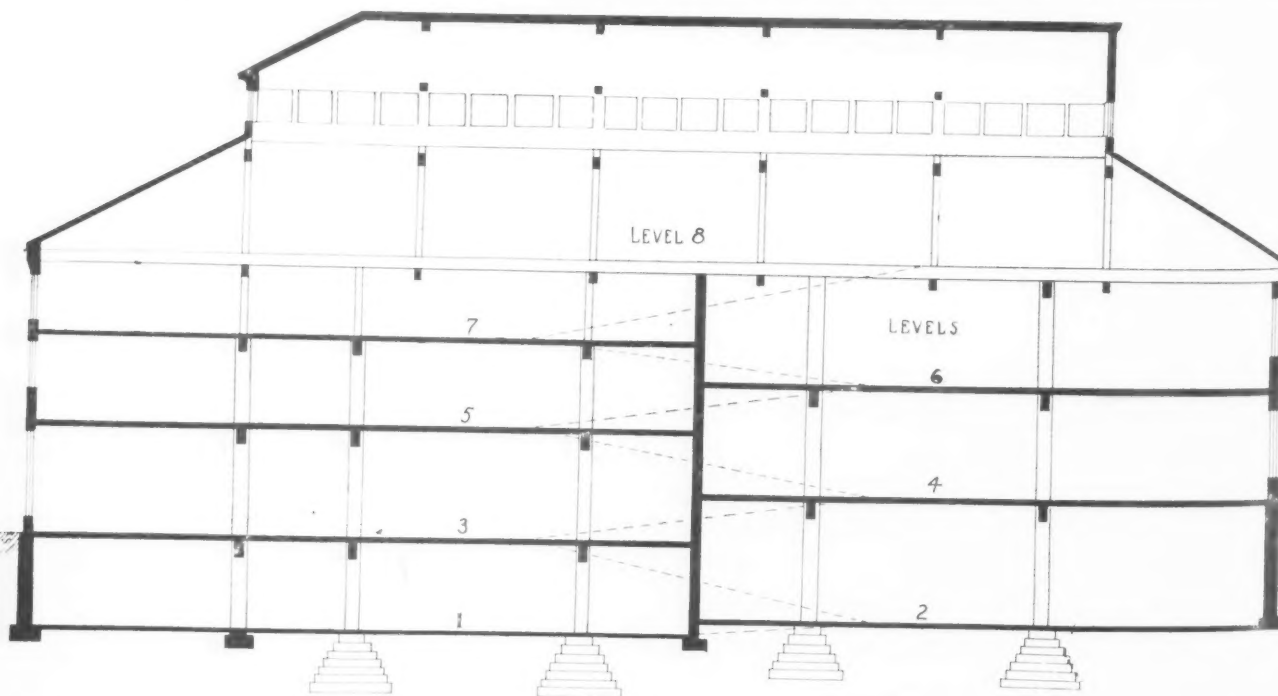
garage purposes. The size of a theatre building is invariably sufficient to accommodate a well laid out and efficient garage. In converting the building the problem resolves itself into merely putting in garage floors inasmuch as the original walls and roof of the building may be retained.

The Motoramp Garage recently opened in Binghamton, N. Y., is an excellent example. It occupies a plot approximately 78 by 150 in the heart of the downtown section. Originally the building was an Armory, then it was converted into a moving picture theatre and operated as such for several years.

It is operated by an automobile dealer and includes a show room across the front of the first floor, a shop immediately above on the second floor and the remainder of the building provides for approximately 180



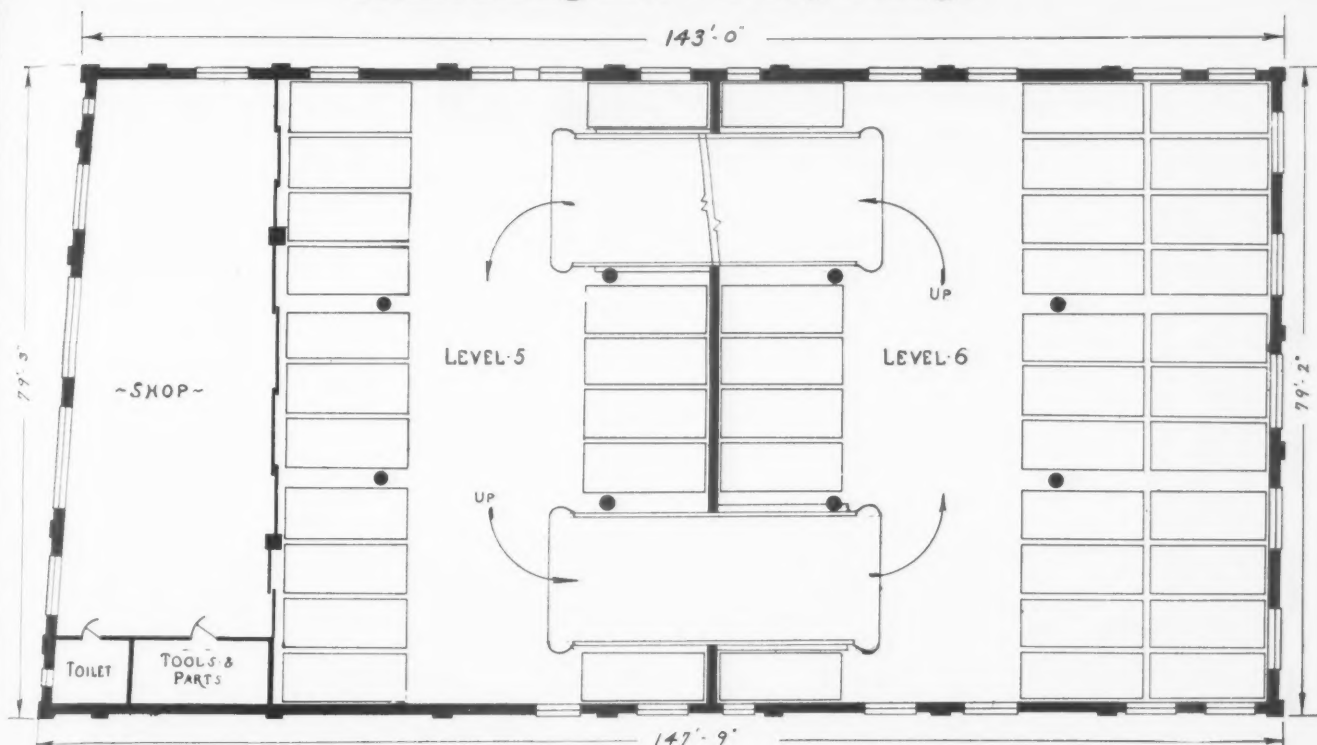
The Old Grand Theater, in the Heart of Seattle, Is Being Made Into a Five-Story Garage. Have you an opportunity like this in your locality?



The d'Humy Motoramp System Necessitates Dividing Building Vertically Into Two Parts, so Floors of One Section Come Between Floors on the Other.

Remodeling Into 5 Story Garage

83



The Garage Is Operated by an Automobile Dealer and Includes a Show Room Across the Front of the First Floor, and a Shop Immediately Above on the Second Floor. The Remainder of the Building Provides for Approximately 180 Cars and Trucks.

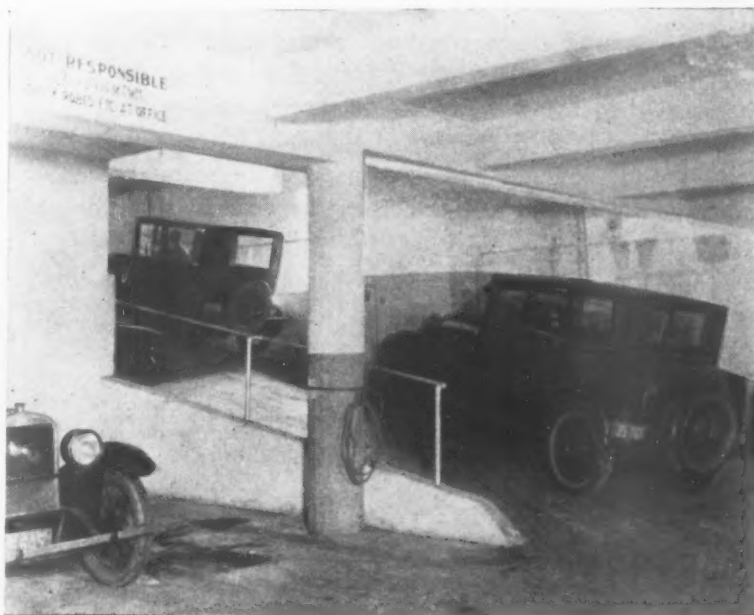
cars and trucks.

The architectural work was done by T. I. Lacey & Son, and this firm selected d'Humy Motoramps because of the absence of upkeep expense, and because extremely heavy traffic was anticipated, inasmuch as this is a downtown parking garage where cars will be constantly moving in during the day and evening, and in preference to ordinary ramps because the d'Humy Motoramp System permitted an ideal car arrangement with the loss of a very small amount of useful car storage space.

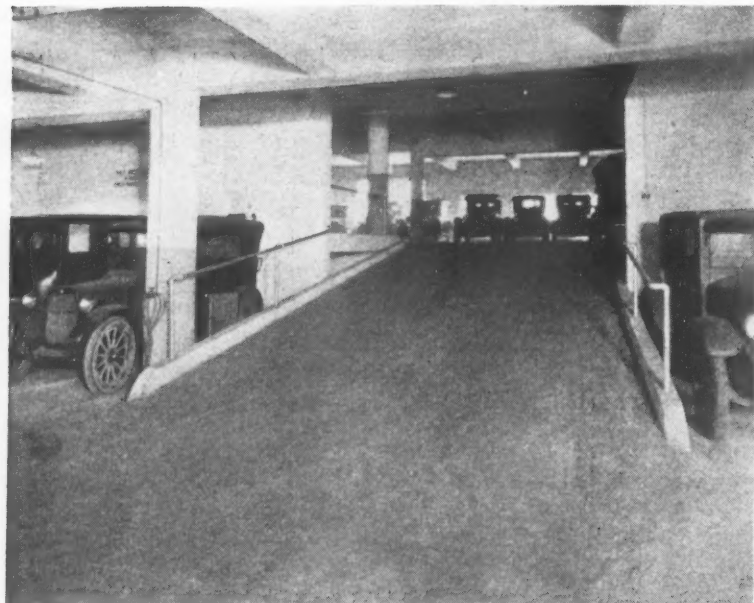
The d'Humy Motoramp System necessitates dividing the building vertically into two parts so that the floors in one section come approximately between the floors in the other, and these levels are connected by half length ramps in such a way that continuous interfloor travel up and down through the building is obtained. The ramps are half the usual length and their sides are open so that the motorist can always see so far ahead that he never gets into any traffic difficulties and there is ample room for motorists to face each other on the aisles. Motorists occasionally pass on the ramps although this was not intended when the building was designed. The theory was that motorists would pass on the aisles, although there is ample opportunity for doing so even though the traffic in and out is heavy. Parenthetically, it is worth mentioning here the width of these ramps is approximately the width of two and one-half car spaces.

Since this building was designed experi-

ence has demonstrated that ramps equal to the width of two car spaces are fully ample, in order to permit a motorist to turn from an aisle into the ramp when the aisle and the ramp are at right angles to each other and narrowing the ramps. Although this feature has an advantage it prevents the passage of cars in the ramps. Where traffic is extremely heavy, as would be the case in a four or five hundred car garage, separate ramps for up and down travel are desirable, but in garages with three hundred cars or less, single ramps are usually sufficient, and nothing is gained by making these ramps more than two car spaces wide. The width of the car space, by the way is $6\frac{1}{2}$ to 7 feet.



The Ramp Sides Are Open Except for Column at One Side. Motorists see far ahead and get in no traffic difficulties.



The Grades on the Ramps Vary Somewhat but Average About 13 Per Cent. Their width approximates two-and-one-half car spaces but two-car width spacing has been found to be fully ample.

The method of carrying the ramps out into the aisle between the car fronts is worth study. Where an aisle is 20 feet wide it is advisable to extend the ramp 4 to 5 feet into the aisle. This reduces the ramp grade and yet offers no disadvantages. It should also be noted there are columns only on one side of the ramps. The details of this construction are illustrated herewith, although this drawing happens to be for another garage.

The brick wall separates the two halves of the building, although in several buildings a curved pipe rail is used in lieu of the wall. The tiled floor of the theatre lobby was used without any change as the floor for the show room.

The space devoted to the shop has been minimized by using a series of sliding doors to separate the shop from the garage. Because of this feature, it is possible to run a car directly into the space it is to occupy in the shop. No manoeuvring in the shop is necessary. In other words, in the layout of the shop it was not necessary to allow any space for manoeuvring cars as would be necessary if it were not for the series of sliding doors.

It might be argued that the row of cars in the garage adjacent to the shop is in the way, but as a matter of experience, these cars come and go with such frequency that there is no difficulty on this score, although it should be pointed out that some of the cars in this row are in quick service, which means they are undergoing minor adjustments. It is usual in a modern building to have a Quick Service Department, and in many cases this department has been located on the ground floor as a matter of convenience, but when ramps are used it becomes feasible to have a Quick Service Department adjacent to the shop as in this

case. The grades of the ramps vary somewhat, but average about 13 per cent.

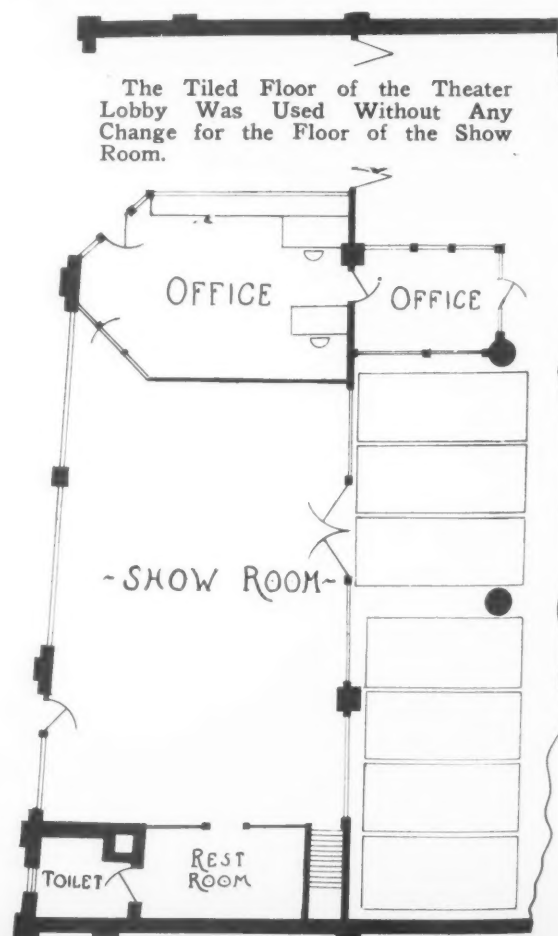
Looking at the section it will be noted that level 2 and level 1 are very close together and therefore only a very short ramp running down from level 2 to level 1 is required.

On level 8 cars are accommodated among the roof trusses, the lower cords of the trusses being below the floor level. This floor is supported by columns so that there is no strain on the trusses incidental to this floor arrangement. Level 2 is set aside for truck storage. The typical floor plan shows at the rear of the building there are two rows of cars facing the aisle instead of one, as usual. Because of the particular size of the plot it was necessary to put in two rows of cars here, otherwise considerable space would be wasted.

When a motorist drives in, he is asked when he is going out. If he says "late" his car is put in the rear row of the double row.

If he is not certain when he is going out his car is located in one of the single rows.

A wash rack is located in one corner of levels 4 and 6, and it occupies the space of four cars. It is given a heavy pitch toward the center and is bounded by a sloping wall or court about 5 inches high which retains the water.



Miniature House Models

They Show How House Will Look When Built, and Are Useful in Placing House in Proper Relation to Lot

By W. F. SILLIMAN

HOW will my house look when it is built?" is a question difficult to answer satisfactory, unless a similar house has already been built. This is not wholly satisfactory, as individuals do not care to build a house exactly like their neighbor's, and a small change often changes the whole appearance of the house, even though it may be of a similar type.

The more satisfactory way to help people visualize their future home, and one that is growing more popular from year to year, is by the use of models or miniature houses. The layman can usually study out

and are built of cardboard, colored to represent the various materials used in construction. The illustrations give a fair idea of how these small models appear.

These models not only help visualize the design of the home but are useful in determining the color scheme for the exterior. The painting of the house is very important and the appearance can easily be marred by improper color schemes.

They are also very useful in properly placing the house on the lot. If the owner has a lot on which he wishes to build he can lay out the size of the lot on a piece of corrugated cardboard, or other stiff material, of the same scale as the model. He can then place the model house in a position on the lot where he wishes it built, and by the use of artificial grass, shrubbery, etc., can work out the landscape gardening to suit his fancy, using strips of paper, colored, to represent walks or drives, and small pieces of wood or cardboard for making arbors, trellises, etc. When this has been worked out satisfactory the detail can actually be carried out in the building of the home. This not only creates additional interest in building the home, but tends to make a better looking home. The laying out of the models on the lot in this manner is especially helpful in operation work where there are several houses of different designs to be built in one locality. By changing the models about on the lot certain harmonious results can be obtained that could not be obtained otherwise.

Architects and builders are now making considerable use of these small models in selling their houses before they are built. These are arranged in their display windows and show the landscape work and the layout of the streets.

✦
AN ancient manuscript dealing with King Solomon and the Queen of Sheba contains the earliest historical reference to airplanes. The manuscript declares, "King Solomon gave the Queen of Sheba a vessel wherein one could traverse the air (or wind)."



This Colonial Home, Lot Included, Cost the Owner the Very Reasonable Sum of a Few Dollars. It is a miniature paper model of the real thing.

the arrangement of the rooms on a floor plan layout but is unable to visualize from drawing and pictures how the exterior of the house will appear. By placing a model before a client he is immediately interested and able to determine whether the design is what he had in mind. And if so it enables him to go ahead with the building with an added assurance that he is not going to be disappointed with the appearance of the house when completed.

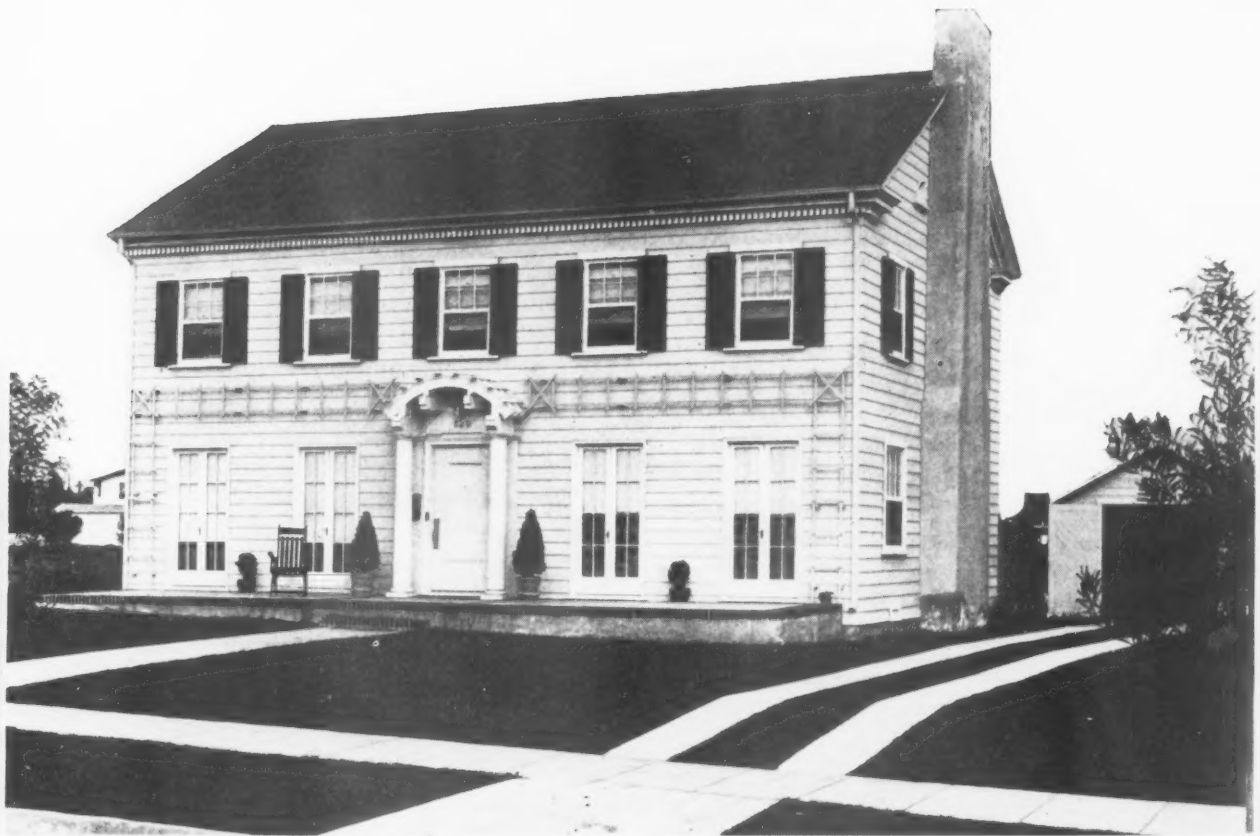
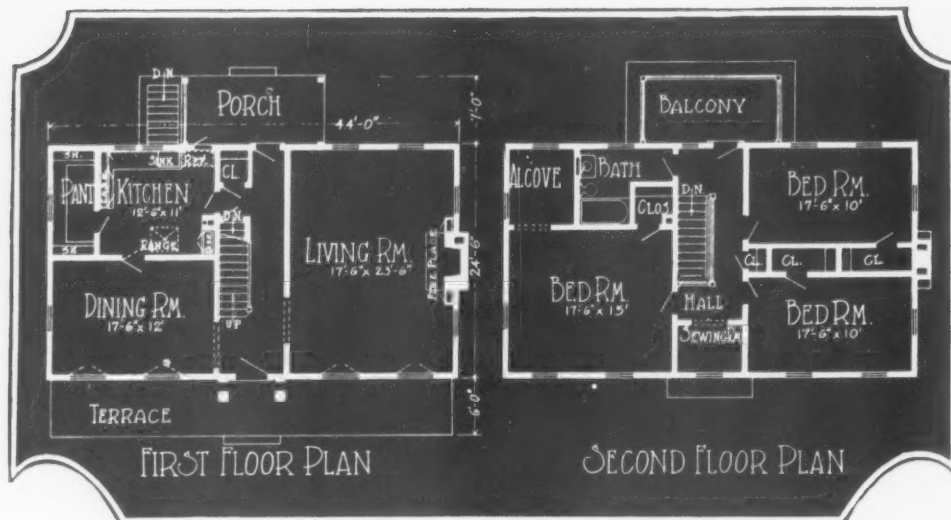
There are a number of materials that models can be made of. Inexpensive models now being used in connection with small home building are $\frac{1}{8}$ inch scale



Miniature Paper Model of a Six-Family Country Apartment House. These illustrations give a fair idea of the possibilities of the miniature as an aid toward visualization of the completed building, creating as they do the mass and the shadow of the larger structure.

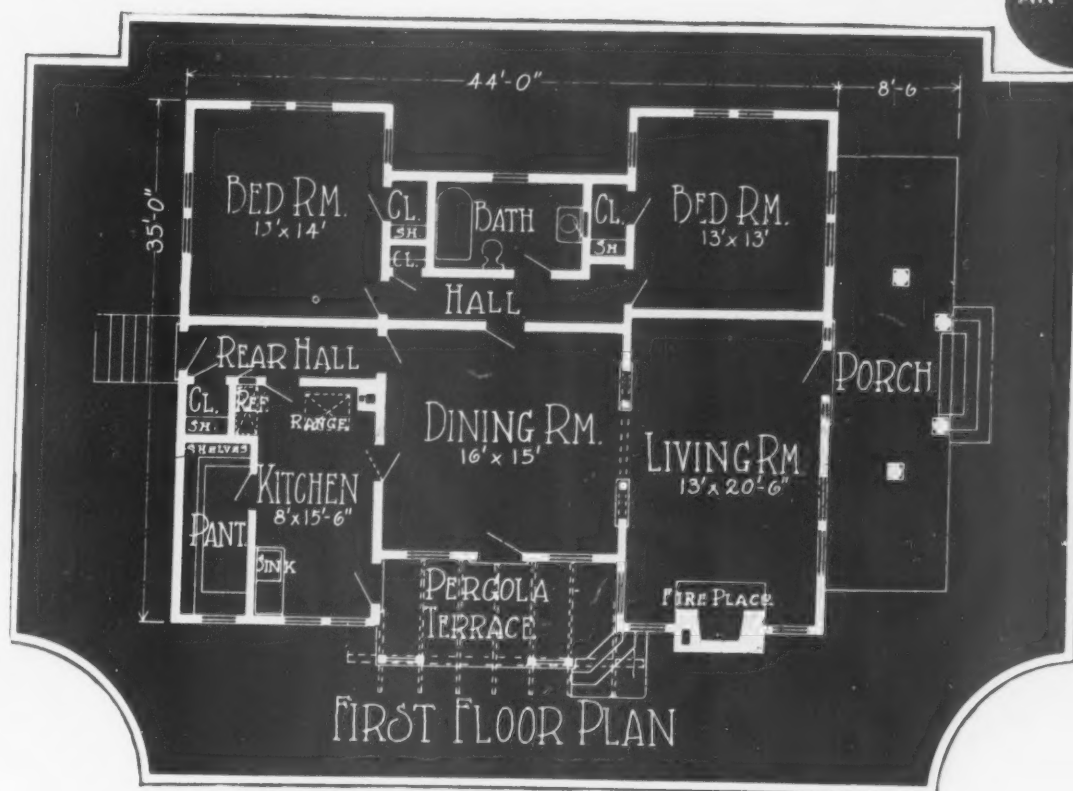
PRACTICAL
&
ARTISTIC

BLUE RIBBON HOMES



IMPRESSIVE COLONIAL RESIDENCE. This house is designed to make the most of all possible space, and it is almost impossible to build wrong if one lets ordinary good construction requirements dictate what should be done. Here the architect began with a rectangular floor plan. French windows suggested themselves, on account of the front terrace. The upstairs windows fitted in as space limitations permitted, and were given blinds for privacy and the added effect on the facade. The ornamental front entrance and lattice extensions extending from it

give tone to the doorway. The roof line is pleasing and is well set off with a simple cornice at the eaves, and the chimney adds to the general good effect. We naturally look for a good entrance hall; there is, and pure Colonial in design. Throughout the well-proportioned living room, dining room, kitchen, pantry and three upstairs bedrooms we have white enameled woodwork and mahogany doors, and walls either paneled or in delicate gray or cream finishes.



NEAT AND DISTINCTIVE FRAME BUNGALOW.

By a simple handling of the gables a pleasing roof line is obtained, which fits in well with the general design, and is distinctly utilitarian. The returning cornice, the quaint windows, the lattices which "dress up" the front, the brick chimney, the pergola at the side—all these help to make this very neat and distinctive bungalow appeal as the score of genuine artistic worth and real utility. The porch is over the central part of the terrace. A door

with sidelights gives into the living room—well-lit and with a fireplace. French doors divide it from the dining room. The dining room opens on the pergola, suggesting many comfortable dinner hours outside in warm weather. The kitchen is accessible from the back through a rear hall, with storage closet, and outside icing door for the refrigerator. There are two bedrooms, with bathroom, reached from the dining room. Overall dimensions are 35 feet by 44 feet, exclusive of the front terrace.

The Choice of Wall Paints

Paint Possesses Distinct and Practical Advantages as a Wall Covering;
Tints and Colors are Durable, Washable and
May Be Easily Renewed

By KENNETH DICK

AFTER appraising the size of the rooms, one of the first thing a woman notices upon entering a new house is the treatment of the walls. Will it harmonize in color with her drapes and upholstered furniture, is it likely to catch dirt readily and hold it tenaciously, does it give the desired effect of cheerful coziness in one place, dignified restraint in another, and so forth? And, of course, is it up-to-date? These are questions which instinctively spring to the mind of the feminine prospect and so far as lies within human possibility it is up to the builder to attempt to answer them all satisfactory.

From a decorative standpoint wallpaper leaves nothing to be desired, but selecting a type or figure for someone you've never seen is much like trying to buy a book or recommending a play under the same circumstances. Paint, on the other hand, is not only less positive and therefore safer, but possesses distinct practical and sanitary advantages—most varieties are washable, there are no seams hospitable to germ life, and a change of color is readily made without a tedious preliminary scraping and peeling.

From the builder's point of view, once having decided on paint, there remains simply the question of choice of color and kind. But while all yield approximately the same degree of decorative effect, there is considerable variance in cost, not only in the material itself, but in the amount of labor incidental to application. Ranging from least to greatest they compare in point of expense about as follows: calcimine, flat wall paint, lead and oil, enamel, and discussion of the advantages and limitations of each will follow this order.

Calcimine

Calcimines come in powder form, some to be dissolved into liquid brushing form with cold water, others with hot, depending on the brand or more specifically the type of glue it contains. The former is somewhat cheaper than the latter and in the writer's opinion also less satisfactory, but the price of both

runs about the same, between four and six cents a pound when purchased in bulk. The labor cost is proportionately low, for whereas flat wall, lead and oil or enamel paint is customarily applied with a four or four and a half inch brush, calcimine permits of one measuring twice this. Moreover less skill is required to apply it and painters who would hesitate at high grade enamel work can turn out a very presentable calcimine job.

Further advantages of calcimine over other wall paints are that it is readily washed off if it becomes soiled or the old color scheme grows tiresome, it can be applied in the winter months, because it has no "painty odor" and it can be coated over properly attached wall paper. On the decorative side it possesses wide possibilities due to the many ready made tints



One of the First Things a Woman Notices on Entering a New House is the Treatment of the Walls. A good treatment for hall walls, always the first ones noticed, is flat wall paint in a plain tint, with mottled two-tone effects in the other rooms.

and the variety of color combinations offered in harmonizing shades of ivory, cream, tan, gray, blue, green, pink, etc. The white and very light tints are often used for ceilings even when more expensive finishes are used on the walls. Most of the colors are light proof.

The limitations of calcimine lie in the fact that it is not capable of being cleaned with soap and water, nor is it readily capable of being worked into stippled effects. On the working side it is not always convenient to have hot water on the job in new construction. Calcimine tints in a very soft agreeable way but in depth of beauty and length of wear it is not to be compared to the fuller bodied oil finishes.

Flat Wall Paint

Next in point of economy and probably greatest in popularity is flat wall paint, a lithopone-waterproof oil and varnish combination of comparatively recent origin. The surface presents a velvety, agreeable lustre which does not gather dirt easily and even when it does, water and a mild soap will remove all traces without marring color or quality. There are a number of very excellent brands on the market, each offering a range of attractive and restful shades for the most part non-fading. Prices range around two dollars a gallon for the best makes and the goods can very successfully be applied over old paint coats.

In selecting the right shade of wall finish regardless of class, it is naturally safest to pick out neutral tints that will harmonize with almost any color of furnishings: ivory, cream, drab, putty, Medford Stone, pearl gray, etc. The obvious danger, of course, lies in monotony and it is here that flat wall paint offers interesting possibilities. By applying a ground coat of white for instance, followed by another of gray, stippled while still wet by bumping with crumpled paper a very lively yet artistic mottled effect is produced. Any number of similar combinations are possible, using a light over a dark color if desired or even three colors instead of two.

The surface over which flat wall paint is applied must be properly prepared or "sized" in order to prevent uneven suction and hence a blotched appearance. By combining some of the color with the size, two coat work is often possible where three might otherwise be required, and the goods will adhere successfully to plaster, wall board (which often comes sized), metal, burlap, canvas and Keene's cement. It may be used as a woodwork finish in itself, as a flat finish on radiators and as an undercoater for any enamel work. On walls it is frequently starched to give it colorless protection and when so treated will last indefinitely.

Lead and Oil

Ordinary paste lead and oil such as is used on exterior construction would be too glossy for walls so that for those devoted to white lead for all purposes

a flatting oil has been developed. It dries the mixture out to a restful semi-gloss similar to enamel, is waterproof and therefore washable and may be stippled like flat wall paint. The chief difficulty lies in the quality of workmanship necessary to make it dry out free from brush marks for proper wall finish must be smooth.

Enamel

The richest, most permanent and by the same token, the most expensive form of wall paint is enamel. The leading nationally known and advertised brands range in price all the way from five to eight dollars a gallon in single cans, but they are made with the utmost scientific care. Many of them are cheaper in the long run than less costly goods as they brush out further, level themselves up with each stroke and of course hold their looks almost indefinitely.

Such enamels are most effective on panelled walls in ivories, creams and light grays, with the lustre known as "eggshell." Formerly this was produced by tedious and expensive hand rubbing of the gloss enamel but the manufacturers now turn out products which give this sheen automatically upon drying. The best work calls for two or three coats of flat undercoater, then two coats of the enamel itself, an extra rich antique effect being given on ivory walls by wiping burnt umber into the deep parts of the moulding.

Some Suggestions

All of the wall finishes above described have features which recommend their particular use in at least one room of a house. In a home of average pretence, enamel is best in the panelled hall, dining or living room. Where not panelled, flat wall paint would give the next richest appearance, a plain tint in the hall, with mottled two-tone effects elsewhere. For the bed rooms and nursery calcimine has distinct advantages as it is highly sanitary and may be renewed very inexpensively at house-cleaning time. In the kitchen and pantry lead and flatting oil, tinted an agreeable shade is hard to improve upon as it is more economical than enamel, but sturdier and less porous than flat wall paint. The same is true of bath rooms and lavatories although owing to their small wall areas enamel should not be considered too expensive in view of its longer resistance to steam, constant hot and cold splashing, etc.

The builder of such a house has talking points fully as practical in their appeal to the housewife as similar data on furnace and plumbing are to her husband. And in these servantless days, the builder does not do his handiwork justice when he fails to mention them.

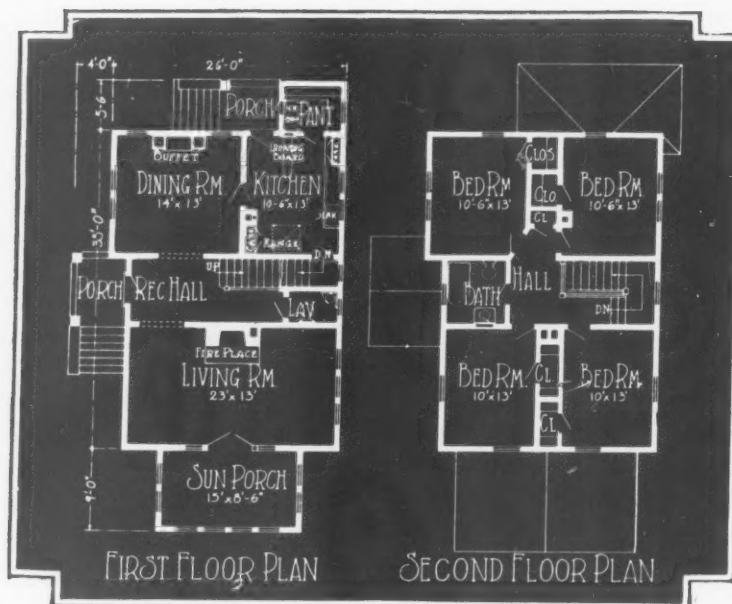


Plenty of Land Not Reclaimed

ALTHOUGH more than 54,000,000 acres of land have been reclaimed up to 1920, there are still 95,000,000 acres that can be reclaimed, according to the United States Road Bureau. More work for the construction industry.

BLUE RIBBON HOMES

PRACTICAL & ARTISTIC

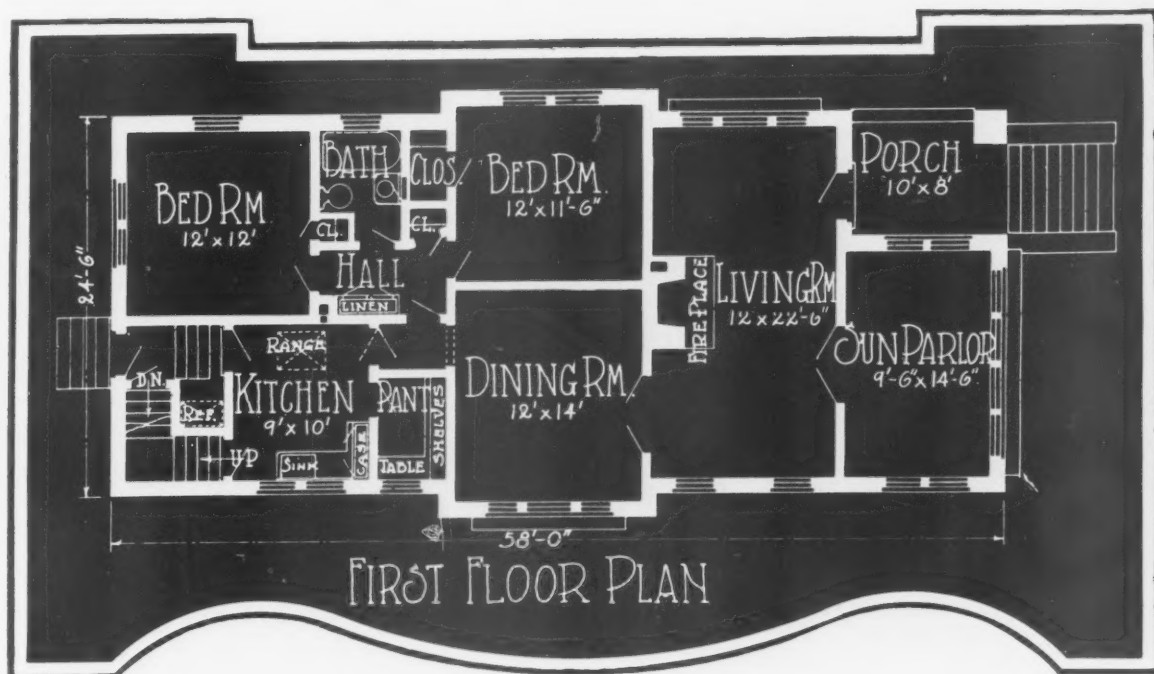


GOOD NARROW LOT STUCCO HOME. Only 26 feet wide, this residence presents an unusually attractive front to the street, and one which gives the illusion of being much broader. This is due to the intelligent handling of the sun porch in relation to the rectangular floor plan, and placing the entrance at the side instead of at the front. We enter from the side porch into a reception hall. At our

right is the living room, very nicely proportioned, and opening off it the sun porch. At the left off the hall is the dining room, connecting directly with the kitchen. The latter has an unusually large number of built-in conveniences, and adjoins a pantry with an outside icing door. Upstairs we have four bedrooms, with bathroom adjoining, and ample closet room.

BLUE RIBBON HOMES

PRACTICAL & ARTISTIC

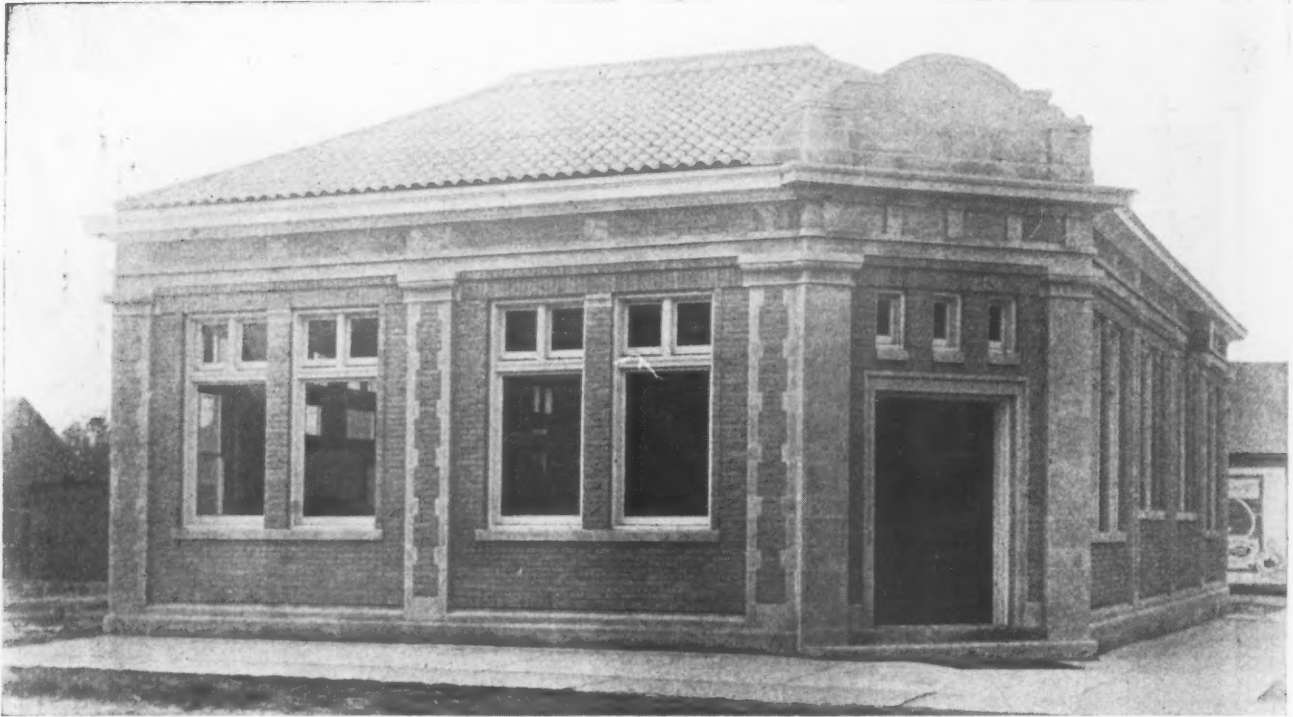


SUBSTANTIAL BRICK BUNGALOW. Here is a good wholesome design—one which, you may be sure, will never “go out of style.” It is of brick with stone trimmings, and roof shingling carries around to the walls of the roof dormers with very pleasing effect. It is 24 feet 6 inches by 58 feet over all, six rooms—the sun parlor being considered as integral with the house. The fine large fireplace, well-placed in the center, adds tone to the living room, which is directly off the sun parlor, and is also

reached directly from the porch. The dining room is well-lit and ventilated with a modified three-windowed bay and is connected with the kitchen by a small vestibule which gives access also to the two bedrooms and the bathroom. A window-lit pantry and a refrigerator stand placed for outside icing combine to help make the kitchen most convenient. Cement or clay brick can be used to make this home thoroughly handsome and attractive, and proper landscaping will help greatly to the pleasure of owning it.

A Community Bank

Photo and Plans for Substantial Banking Building to Occupy a Corner Site



Although Illustrated as a Bank Building, the Design Above Could, With Slight Alteration, Serve the Purpose of Public Library, Postoffice, Office, Grocery or Drug Store. Brick with stone trimming and a heavy tile roof give it a fine, substantial, attractive appearance.

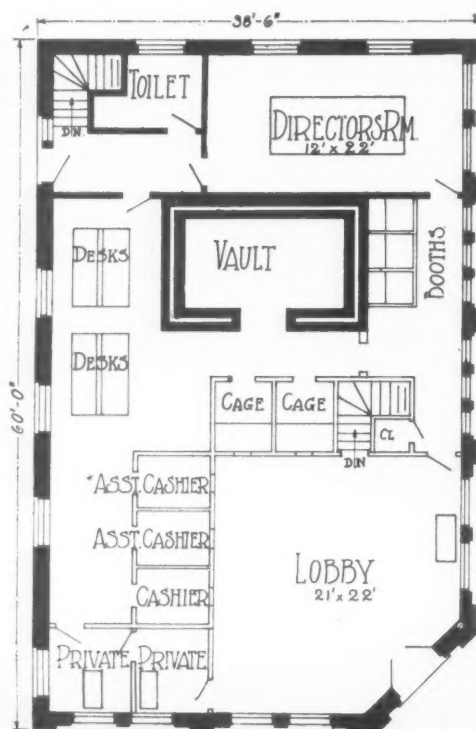
A SUBSTANTIALLY erected building, used as a banking house in this particular instance with two ideas for the inside arrangement but which might easily be changed for a drug store, grocery or other business, is shown in the accompanying illustrations. The design is best suited for a corner lot, the short plan requiring a lot at least 50 feet long and the other idea needing a lot of 60 feet or more in length. In this instance the building has a width of 38 feet 6 inches, but a few feet may be added or taken away without material interference.

This building was erected to serve in a community of about 3,000 persons. In more elaborate plans the safety box department might easily be located in the basement, the vault being placed directly under the main vault and making it more impregnable.

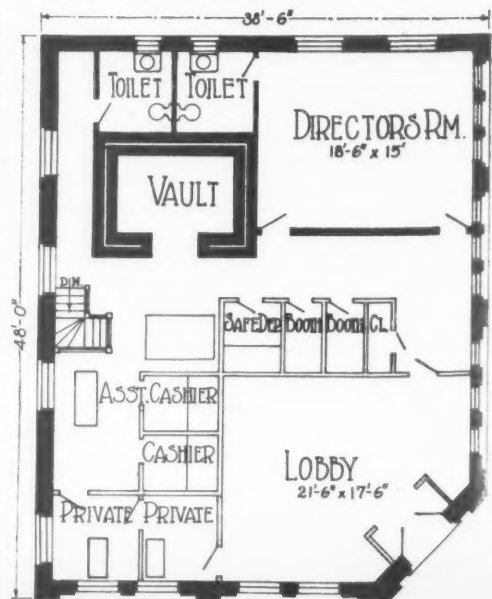
Brick with a stone trimming for ornamentation with a heavy tile roof and a tile floor make

the building one with the minimum cost for maintenance.

In either plan a roomy and well-lighted lobby is provided. Patrons have access to the several cages, may enter the private offices to transact business of a personal nature or enter the banking room where booths are provided for inspection of private papers kept in



The Building is Shown, Using the Larger Floor Plan. In either case, a roomy, well-lighted lobby is provided. The floor plan is flexible and may be added or taken from without material difference.





In the Typical Bank Interior Provision is Made for the Quickest Possible Service to Depositors. Structural worth and good taste go hand in hand here.

the safety boxes. The boxes are built in the vault where cash and other valuables of the bank are kept.

The space for the clerical force is ample. There are several cages in each design. Space is provided outside where other clerks may take care of correspondence, bookkeeping and other routine of the bank.

The room for the directors is large, in fact large enough for a session of the stockholders of many small-city banks. Toilet facilities are provided, one entrance being from the director's room and the other especially arranged for the clerical force.

HERBERT C. CROCKER.



Practical Pick-Ups

By H. H. SIEGELE

NAILS in siding or other weather-exposed work should be driven with an upward slant. This will prevent water from finding its way along the nails, causing the nails to rust and the wood around the nails to rot.

The same principle applies to outside joints in wood, etc. They should always be made to throw the water out.

There is a mistaken notion prevalent among builders and laymen relative to the object of putting the boxing of a house on diagonally. The notion is that it braces the building more securely. The fact, however, is that the difference in bracing-value between horizontal and diagonal boxing is hardly noticeable. Moreover, in either case it is very much greater than the safety of the building requires. The object of boxing a house diagonally is to prevent the boxing, when it shrinks, from splitting the siding.

The same notion prevails in many quarters regarding putting down the sub-floor. Sub-flooring is laid diagonally in order to make the finish floor lay better.

Nails in scaffolding should always be driven home. The practice, sometimes employed, of leaving enough of the nail undriven, so it can be pulled with a hammer, is a dangerous one. "Never Work on a Poorly Built Scaffold" is a good motto for every person engaged in

the building industry.

Use 10d common nails for scaffold building whenever possible. They are long enough so that when a $\frac{7}{8}$ -inch board is nailed to a $1\frac{5}{8}$ -inch piece they can be driven back, when the scaffold is taken down, and pulled with a hammer or claw-bar.

Scaffolding should always be tested out before it is used. This should be done by the man taking the lead in the work. Under no conditions should a scaffold be built with poor material. Material, although expensive, is always cheaper than bones. Never allow

any one to rush you when building a scaffold—hold it a duty to yourself and your family to play "Safety First."

The mistake, often made by the best of mechanics, of cutting a piece of timber at the wrong mark can easily be prevented. For example, if the required length is 6 feet 4 inches, the danger is that by mistake you will cut at 6 feet, making the timber 4 inches too short. To prevent this, measure off the 4 inches first and then the 6 feet. Force yourself to measure everything in this way until the habit is formed, which will practically eliminate such mistakes.

A 2-foot or a 3-foot rule makes an excellent emergency square. Take any piece of timber with a straight edge, lay the rule half-open on it with the hinge-side down, then place the rule so that the hinge will be firmly against the straight edge of the timber and mark along the rule. If this is painstakingly done the mark will be at a right angle to the straight edge.

A few more safety rules: Never make an important cut without testing out first to make sure that you are right. Prove out every pattern before using it. Don't depend on luck—be sure you are right. "Don't start out while in doubt," is a good blunder-preventing saying.

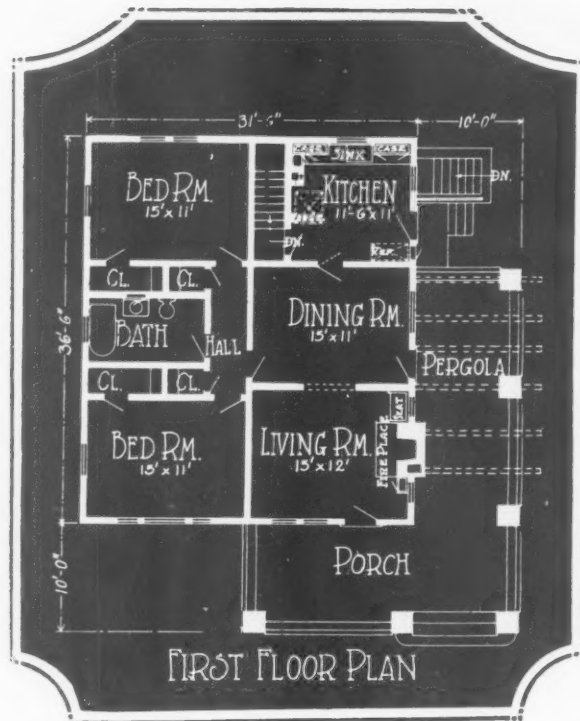
An easy as well as quick way to mend a leaky tin roof, that seems to be beyond repair, is to apply a coat of asphalt paint, then cover the spot with a piece of burlap, and apply more asphalt paint—enough to thoroughly cover the burlap, and the spot will be waterproof for years.

When a nut is to be removed from a bolt that turns, and it is impossible to hold the bolt with a wrench, cut a slot into the end of the bolt (either end will do) with a hack saw—then with a screw-driver hold the bolt while the nut is taken off.

Do you know that sharp tools increase a man's efficiency 100 per cent? Time lost in sharpening tools is never lost; but trying to save time by working with dull tools is expensive foolishness.

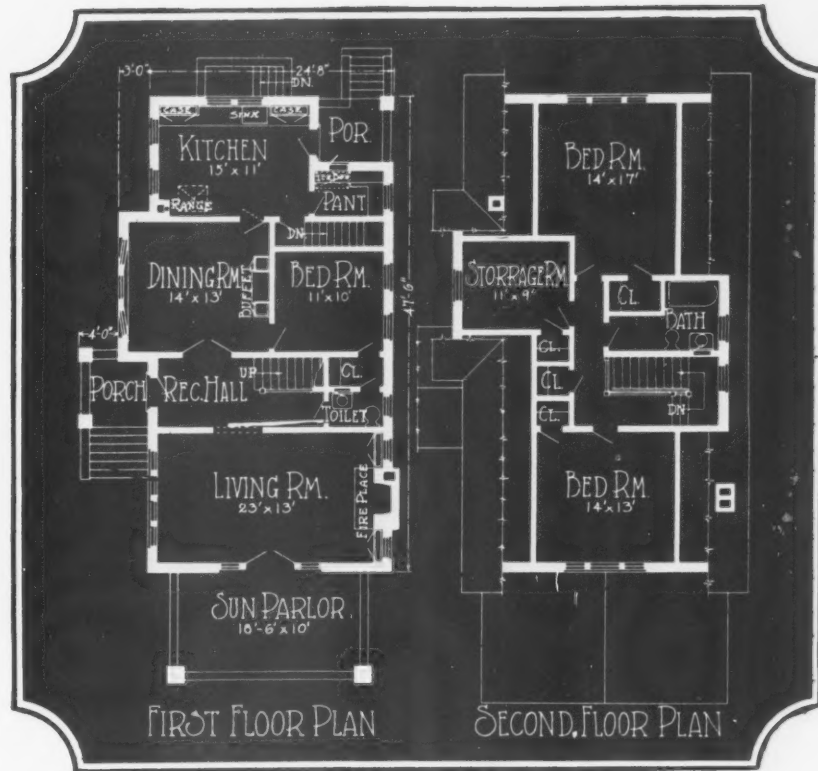
PRACTICAL
&
ARTISTIC

BLUE RIBBON HOMES



A BUNGALOW FOR OUR SOUTH AND WEST. Ample provision has been made in this bungalow for the maximum of shade during hot days by the admirably arranged porch. Combined with pergola it extends from the front around practically all of one side, and offers a most welcome outdoor living room. Note the original touch given by the electric light globes atop the porch columns. The bungalow is 31 feet 6 inches by 46 feet 6 inches, and is of stucco. It has five rooms, the living

room being entered directly from the porch. The fireplace in this room could be constructed so as to be double-sided and permit its enjoyment on the porch as well. The dining room opens on to the pergola—suggesting many comfortable outdoor, picknicky meals, and the kitchen, while small, is admirably arranged: sink at the window, ample shelving, and the refrigerator placed for outside icing. The two bedrooms have full privacy and are reached by the door off the dining room, as is also the bathroom.



MODERN BRICK HOME. One of a type becoming increasingly popular with the substantial business man desirous of investing in a home, since everything about it makes for attractive durability and little cost for upkeep and repair. It is a design which is flexibly adaptable to the requirements of a narrow lot or to a wide one or one on a corner. Walls would be preferably a maroon or brown, with contrasting white-painted woodwork and stone trimmings. The roof of green tile adds a great deal to the attractive appearance. The house is 27 feet 8 inches

by 47 feet 6 inches. The side porch leaves the entire width of the house in front available for the living room, which is connected by glass doors with the sun parlor. The reception hall gives into the dining room, and thence to the kitchen, which has fine arrangement of shelving, window-lit sink, refrigerator with outside icing door opening on rear porch, and window-lit pantry. There is a bedroom on the first floor, with clothes closet and lavatory adjoining. Upstairs are two bedrooms with bathroom and storage room.

Parables of Bildad the Builder

IV. He Buildeth a Mansion in the Woods and Foileth the Pickerel and Wily Mosquito

HE Who Marrieth in Haste discovereth at Leisure how Pestiferous this Wife can Be whom He Hath Taken to his Bed and Board. No Man may Say that I do not Esteem my Better Half highly, but what is Summertime for if not for Rest?

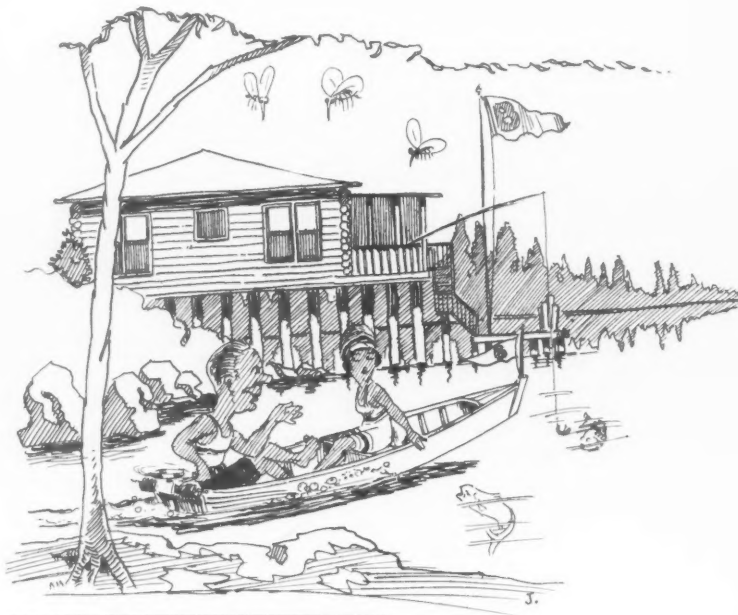
No sooner had the Warm Days come than I prepared to go Fishing, nursing a Fond Hope that my Wife would betake herself for a Visit to Relatives. But Such Luck was not to be. "We shall now take our Long Delayed honeymoon," said she. "Long time ago I Succumbed to the Wiles of a Realtor and bought a Lot in Pishimagee Lake. Let us Hitch Up the Flivver and Rattle our Way thither. Show unto us the kind of Blue Ribbon summer Cottage you can Hammer together."

"Summer cottage! Summer shack will Be more Like It," I rejoined. And I saw my Prospective Rest and String of Pickerel fading into the Dim Distance. "Besides," I countered, "Who will Trust Me for the Lumber in that Strange Country?"

"Corrode not with Anxiety," soothed She. "Your trusty Axe shall serve for all the Lumber you Need. Think you to Find strips S-4-S ready to Your hand in the Virgin Forest? Supply you the Logs and I shall Supply the Chinking Mud, and between us we Shall Rear a Rare specimen of what a Log Cabin should be." And I said No More, knowing it to be Wisdom to Leave her the Last Word.

After Tumultuous traveling through Rivers and over Corduroy Roads and swimming through Sand we arrived at this Pishimagee place. And Lo, much of the Lot was only Located by a Sounding Line, being for the Most Part under Water. But this Was far from being a Handicap, inasmuch as the Lot rose so Abruptly therefrom that it Suggested a Porch wherefrom would be an Excellent Place to Fish, and though One could Walk off the Front Porch into 25 Feet of Water, he could Walk off the Back Porch into Solid Rock and Lots of It.

By much Dint of Chopping, until my Hands became like an Alligator's Foot, I obtained a Sufficient Supply of Goodly Logs, and these the Husky Right Arm of my Spouse helped me Get into Place, properly Notched, and Chinked to Discourage the inroads of gigantic Black Ants, Bear Cubs, Three-Inch Mosquitoes and other Rodents. Truly one could be Proud of the Place, for it was 30 feet by 40 feet and had Four Rooms and a Bath.



And When I Had Made the Windows So They Slided Up and Down Like a Boy Upon a Greased Pole, and Installed Sundry Other Advantages, My Better Half Became So Contented a Winch Might Not Budge Her. Truly blessed is he who marrieth an orphan.

Each Room was 12 feet 6 inches by 17 feet 6 inches, and Partitioned by Strippling Birches. The Bathroom was Six Miles by Eighteen Miles, being Depressed in the Floor of Pishimagee Lake, and Equipped with Hot Water near the Shore and Cold Water farther Out.

Early in the Game our Possession was Disputed by a Family of Hornets who were Overcome with Joy at the prospect of Building where Rain and Wind might not Consume. And when I Had the Temerity to set their Paper

Ball afire They had the Temerity to Sting Me on a Small but Important Portion of my Anatomy, and Thenceforth I was Forced to do my Fishing Standing Up.

Now, thought I, in spite of All These Setbacks, this is The Life! "Is it Not So, dear One?" I queried of my Better Half. "Not so You can Notice It," said She. "I hate Fish and that is All We Have Had for days. My Hands are Like the Back of a Mudturtle and I have a Tan that would let me Pass for a Squaw. When do we Leave?"

By looking into this Publication I ordered divers Aids to Contentment, Fitting the Kitchen with Pump and Sink, and Making Arrangements for Sewage Disposal. And lo, She became so Contented a Winch could not Budge her. So here we Stay for another Month, and may Bad Luck follow any Competitor who attempteth to cop any of my Jobs with rival Plans and Specifications while I sojourn Hereabouts.



Showing a Way to Save Bedroom Space. This tray-case, dressing table and hanging closet are built-in features which save steps, and really give a place for everything—with everything in its place.

Built-in Dressing Case and Wardrobe

MODERN bedrooms are equipped with built-in furniture, equally as well-planned and convenient as the built-in features in the downstairs rooms of the house. The tray-case, dressing table and hanging closet here shown occupies a wall space about 10 feet $2\frac{1}{4}$ inches wide, although the hanging closet may be any size. Of course a different combination of any two of the features may be used, and there is also a smaller dressing table which may be used in a smaller room.

The side mirrors of the dressing table are adjustable, and the electric light is placed just right to give the correct illumination. The attractive little bench is a part of the built-in furniture. Surely no feminine purchaser could resist so delightful a convenience.

The trays have half-open fronts to facilitate finding just the bit of wearing apparel that is wanted, without turning all the drawers topsy-turvy. The two upper trays are shallower, and are divided into compartments for the small articles of dress. The roomy space above may be used for hats or for extra bedding. You can take the trays out entirely, and carry them to the light by means of hand-holds in the sides.

Notice the trim rows of shoes on the shoe-rack of the hanging closet. A hanger-rod enables one to put an unbelievable amount of clothing into a small, handy

space. The shelf above uses every bit of space in the closet.

This whole equipment can be had already built, ready to install in the house.



Color Ideas From Mother Nature

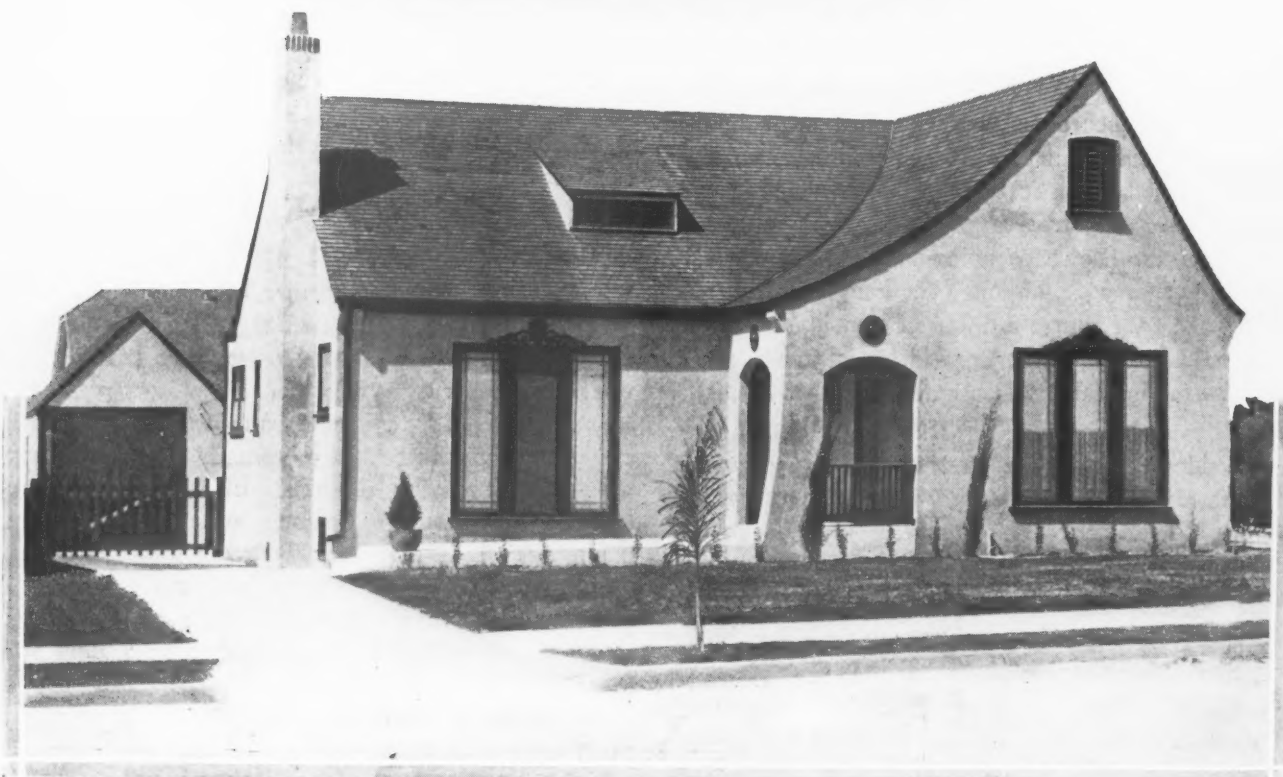
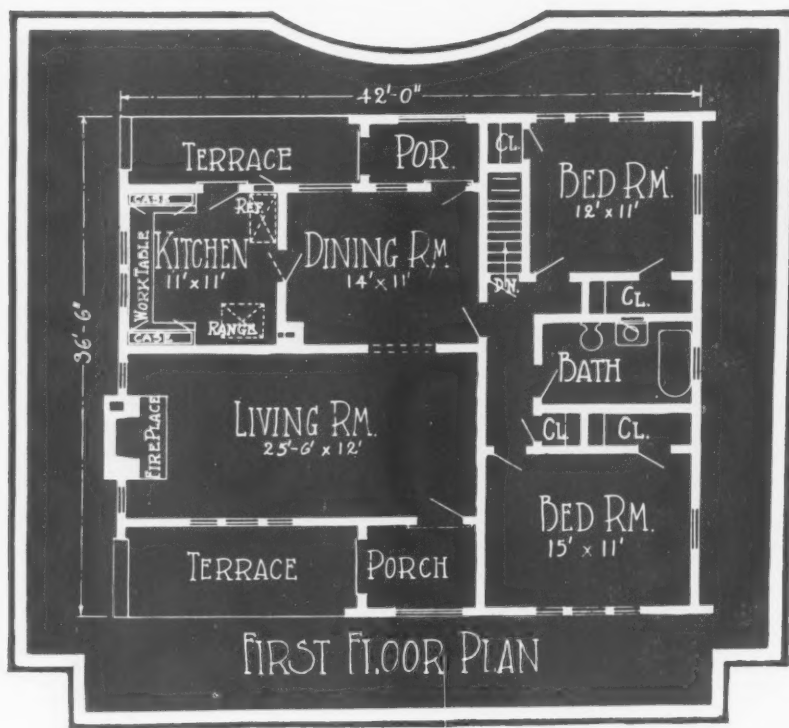
WRITING in "Architecture," Samuel R. T. Very, an architect, states that there is no doubt that no color book holds half the suggestions that Nature wears about her everyday job.

A designer for a cloth manufacturer developed one of the most successful patterns his house ever put out,—from studying the tones of color in a piece of decaying wood! A painter and decorator, hard put to get a color idea for a bedroom whose occupant wanted something different, at last went outside and picked a wild rose. The petal gave him an idea: light creamy yellow for the woodwork; a pink for the walls.

If you have patrons who like that aged effect in glass known as Tiffany glass, and wish it developed as a decorative adjunct in the colorings and finishings of other parts of the house, don't despair. The darning needle, or dragon fly; the blue-bottle buzzing against the window; the beetle scurrying across the garden walk; the turtle dove; the marten, the swallow, the blackbird,—there is your Tiffany color scheme, made ready for you to copy.

PRACTICAL
&
ARTISTIC

BLUE RIBBON HOMES

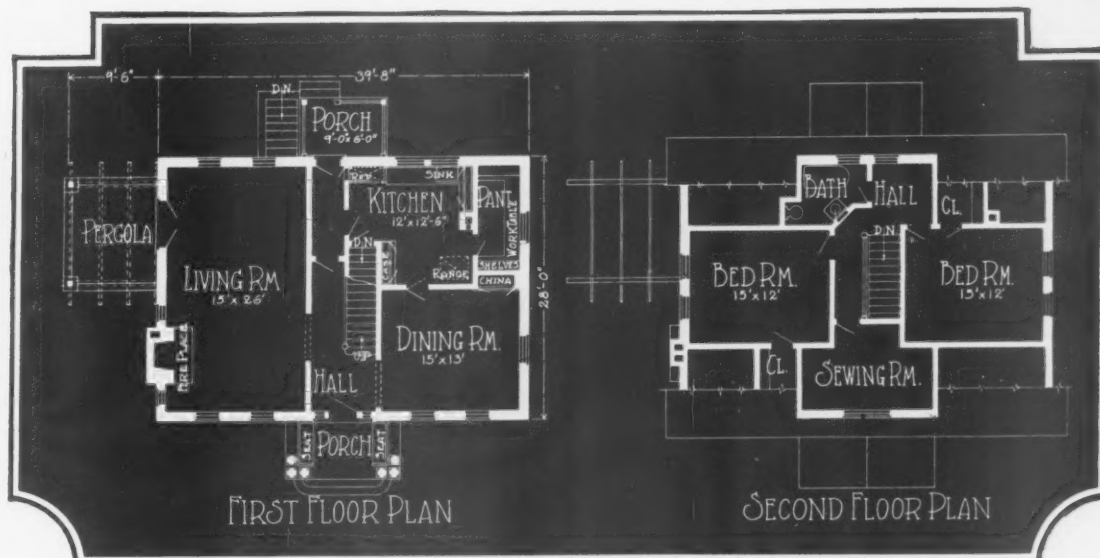


QUAINT BUNGALOW WITH A FOREIGN AIR. This handsome residence is typical of those you will find when wandering the picturesque roads in Belgium or France or Holland. There is just sufficient decoration to relieve the outer walls and the windows from any impression of monotony, and stopping short at the limit where good taste ends and "gingerbread" begins. It is of stucco, and the easy sweep of the roof line sets off the structural finish very well. The terrace leads to a porch, recessed, and

leading into the living room with fireplace at one end, and ample window-lighting. The dining room and the kitchen are placed against the back of the house, with a rear terrace suggesting itself as a pleasant dining spot in summer months. Our two bedrooms are well-placed so as not to interfere with the privacy naturally desired for their occupants, being reached, as is the bathroom, through the dining room. A very handsome home, and not at all as expensive as it looks.

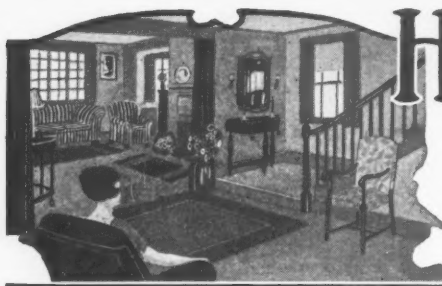
BLUE RIBBON HOMES

PRACTICAL & ARTISTIC



"HOMEY" SMALL RESIDENCE. Well-balanced design makes of this moderately sized residence a very attractive place indeed. The entrance porch is just right, and with its lattice ornament and side settles gives a very hospitable air. The windows flanking it on each side, also, are in keeping with the requirements of the design, and the pergola at the side and the dormering of the roof do their share to keep away monotony from the design. Our porch leads to an entrance hall, and a doorway at the left gives into the splendidly proportioned sun parlor

with pergola door beyond. Fine lighting and fireplace add to the possibilities here. Across the hall is the dining room, with light on two sides and built-in china closet. The kitchen is very compact; sink is by the window, and the window-lit pantry has a worktable. Refrigerator has outside icing door. Upstairs are two bedrooms and a sewing room, with the bathroom easy of access from the hall. Overall dimensions are 39 feet 8 inches by 28 feet, exclusive of pergola and porches.



HOME DECORATING *and* FURNISHING

Overdrape Possibilities

By GRACE FOERTH HUNGER

JUST about this time of year the whole friendly clan of doughty decorators may be found any day snooping about the various drapery departments in search of that elusive "something different" which it is often so difficult to locate.

Some of us are very lazy, though—we make very reluctant use of our imaginations—so we ask the clerk, "What have you in the way of overdraperies for a living room and dining room?" Perhaps you have observed that unless she is the rare exception, she will invariably reply, "We have some lovely brown sunfast material for living room purposes, and right here is another design in blue which is splendid for a dining room," and unless we are watchful and function our own natural intelligence, we will be caught in the trap. Our lot will be cast ignominiously with all the thousand other drab brown living rooms

and blue dining rooms which infest these United States. And this regardless of all the principles which govern the use of color in *any* room—its exposure, the character and color of the furniture, the rugs and the walls.

But if we are venturesome and interested in accomplishing original and striking effects, procedure will be different. In that case, we will take an inventory of the rooms to be decorated before we go to the shops for our draperies, deciding upon a definite color scheme, and not restricting ourselves, in the stores, necessarily to the stereotyped drapery departments, but trespassing into the dress goods quarters as well. And if our walls are figured and our rugs and furniture more or less nondescript, we will not fall into the error of searching for draperies having an all-over pattern, but will confine our choice to some plain colored fabric which will have the quieting tendency of holding down the room, as it were. And if the walls are plain—and they are usually safer so



One Need Not Enlarge, Of Course, Upon the Adaptability of the Sunfast Materials for Overdrapes at the Windows. They come in values to suit any purse, and each year sees some commendable improvement in their color and design. Here the furniture coverings match, with fine effect.

—then is our golden opportunity to introduce color and design into our draperies with abandon. And it is such fun, this experimenting with color. We American women must learn from our friends abroad to approach this color game with less timidity. Not that I would advocate the indiscriminate use of the clashing reds and greens and oranges and blues suggested by the Futurists, although these daring contrasts can be made to lend unusual distinction to a room when planned by an expert. My appeal is simply for a departure from the flat deadness which has attacked us in some of our decorations as a natural reaction against the hodge-podge of patterny, inharmoniously colored rugs and wall papers and draperies which were in such general use a generation ago. I do not believe *any* color is unbeautiful. It is simply as they are used in juxtaposition to other unfriendly colors that some hues are so intolerable.

For living room purposes, when that chamber is too formal in character for the use of some of the delightful chintzes on the market, there is a variety of fabrics from which to choose one's overdrapes. Velvet, of course, is always good, and there is no other material which lends such an atmosphere of quiet elegance. It must be lined, of course,

preferably with silk having body to it. And with no other material is a shaped valance so attractive. This is usually fastened on a box-like arrangement extending out from the window frame, which permits the drawing together at night of the side drapes, which are suspended on rings from a stout rod and are adjusted by means of a pulley. It is usually better to have such heavy overdraperies as velvet and velour and brocades extend to the floor, instead of to the window sill, as is done with the lighter fabrics. The feeling of intimacy and security which encompass one with the drawing together across the window,

at darkness, of overdrapes of *any* type, is a sensation not to be forfeited. It has the double advantage, also, of precluding the necessity for that pet abomination of mine, the window shade.

In the average living room, heavy rajah or pongee silk, which comes in a variety of colors and can be dyed to correspond with any color scheme, fulfills all the needs of an overdrape without aligning. A deep chenille or silk fringe on bottom and edging the valance, which might be made of deep scallops, makes quite the best ornamentation. In many instances to have the fringe a contrasting color is a good plan.

Last fall I was redecorating a living room in mulberry, dull green and straw color. There was a huge davenport and large fireside chair upholstered in a velour combining these three colors, so the obvious thing to do, of course, was to drape the windows with a plain fabric. It was a more or less formal room, with furniture adapted from the Italian Renaissance, requiring a correspondingly formal treatment of the windows. The glass curtains I made perfectly plain of a sheer cream crepe de chine, and the overdrapes — well, what do you suppose! Silk broadcloth. I had given me a bolt of this broadcloth in white, and having no other



It Is Usually Better to Have Such Heavy Overdraperies as Velvet and Velour and Brocades Extend to the Floor. These, of mulberry broadcloth, and straight-fitted gold embroidered valance superbly suit this formal room.

need for it simply had it dyed a rich mulberry and edged it with a faded gold guimpe. The valance was a perfectly straight fitted one, mounted on a piece of heavy buckram, outlined with the gold braid and having suspended from it four heavy silk dull green tassels to match the green of the walls. The broadcloth was of such superb quality that I felt it did not require a lining, and the beauty of the dull luster of the graceful folds convinced me that broadcloth has been a neglected member in the field of decoration.

Taffeta, of course, is the material *par excellence* for almost any room in the house. It does not re-



In Some Rooms Stripes Give Just the Piquancy Required to be "Different." These are good where windows are broad and low, and when hung straight help give a feeling of height.

quire a lining, and its pert crispness is always refreshing. In some living rooms the two-toned stripes give just the piquancy that is required to make the room "different." These are especially good where the windows are broad and low, giving as they do, when hung straight without a valance, a feeling of height.

Very attractive valances for formal rooms, particularly when velvet or velour are utilized, are made by cutting the material into long graduated points, and suspending from each point a pendant of crystal to harmonize in color with the furnishings of the room. I have achieved some happy results in this way, using the brilliant crystal prisms from an old chandelier of mid-Victorian vintage. When these prisms catch the sunlight, or the electric light at night, the effect is arresting. In the more intimate rooms, fascinating colorful medallions, or heavy Oriental beads, or even little lanterns (any of which one can secure at a good Chinese or Japanese shop) make irresistible pendants.

How amply we are repaid for a little exercise of our ingenuity! Take the case of the old pleated serge skirt. Perhaps you have one, as I did, idling away in the cedar chest. It was a very good shade of brown, just the right shade, indeed, to contrast with the light tan of the walls and the quartered oak in my husband's study. But I've always abominated brown rooms—and most of all brown studies—and, too, while there was ample width, the skirt was lacking in length for use as an overdrapery. Simple enough! I bought enough burlap, at sixty cents a yard, in a sapphire blue, to edge the drape with a five-inch band, and on this blue band I stenciled

an acanthus leaf design in gray and dull green. The burlap and the rather fine serge combined beautifully, strange as it may seem, and I have an unusual and thoroughly attractive and masculine overdrapery. This sort of thing, of course, is inappropriate for the summer months, and would be ridiculously out of place with mahogany furniture and delicate walls, for instance, but these coarse textured fabrics are splendid with mission or oak or Jacobean furniture. In these days of the efficient vacuum cleaner we are not deprived the use of any material on the market for drapery purposes.

I presume there is still to be had in some places—though I, personally, have not been able to find it since the war—a fishnet which goes by the name of Burmese. The colorings are very limited, but if one is looking for a blue overdrapery

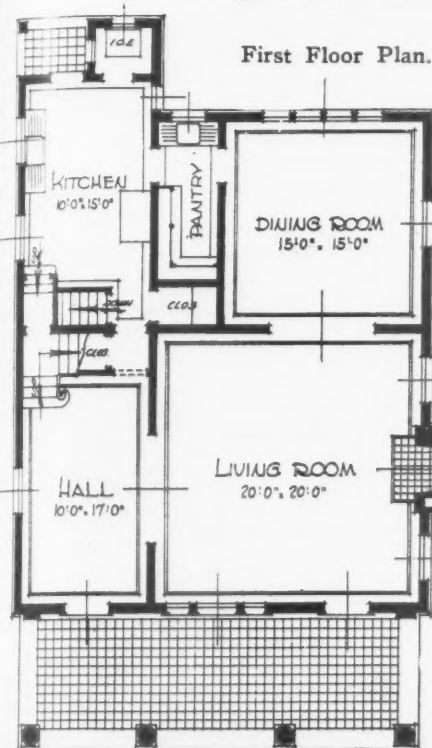
for a dining room, for instance, here is something with charming possibilities. It is wide enough to be split, and the imported kind is guaranteed to be sunproof, making it an altogether good investment. One friend has it at a group of three windows, treated as one, with a ten or twelve inch deep valance across the entire group. The glass curtains are of hand hemstitched yellow theatrical gauze, and she has pulled through the Burmese, as a border, a half inch yellow taffeta ribbon, which with its little flat yellow puffs against the blue, at regular intervals, is positively unique. This material is very desirable, allowing the air and light to filter through as it does.

One need not enlarge, of course, upon the adaptability of the sunfast materials. They come in values to suit any purse and there is a commendable improvement each year in their color and design. For those who, like myself, are averse to having their beds dressed in white, these sunfast materials offer a happy solution. With overdrapes of the same material at the windows, and perhaps a cushion or two, your room is well on its way to achieving that feeling of unity and restfulness which is so essential in a bedroom. Few women will dispute the fact, however, that taffeta is the ideal fabric for fitted bed coverings.

Another substitute for the conventional overdrapery, and one which possesses a naive charm, is the glazed chintz window shade. The imported glazed chintz is a bit costly, but it is sunproof, as it would need to be in a roller shade, and the designs are perfect. Unless you have had them, you cannot visualize the luminous effect that is created when the sunshine and light filters through them. These shades may be edged with a narrow black or vari-colored fringe.

Like a Plantation Mansion

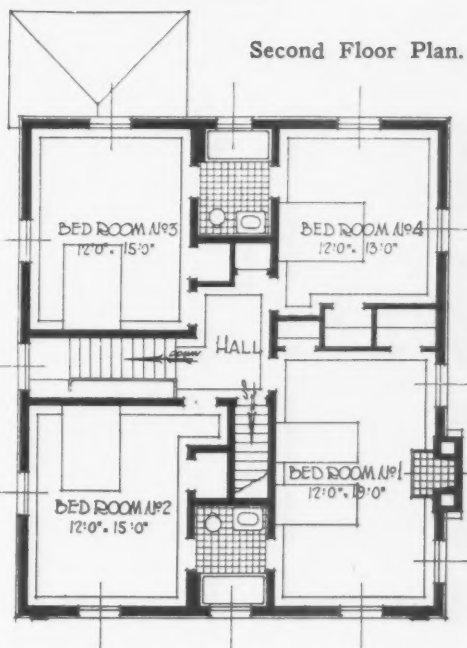
By R. C. HUNTER & BRO. Architects, New York City



THE home of Mr. Walter H. Merritt, at Tenafly, New Jersey, has a two-story portico that offers the visitor a real southern hospitality in the welcome it extends.

This portico is unusual for a house of such modest size, it gives dignity and character to what otherwise would be but a commonplace house.

One enters from the portico into a small reception hall and the living room opens to the right where a large open fireplace with a



There Is Beauty and Fitness About This Sensible Rectangular Floor Plan, So Well Suited to the Design and with no Idle Space.





Pleasing from Any Standpoint Is This Living Room. A feature of the homes designed by Messrs. Hunter is this: The interiors are fully as perfect and characterful as the exteriors. Observe that there are no extravagant details; all is simple and in quiet good taste.

good Colonial mantel give a pleasing effect.

The interiors are throughout a good study in the simple Colonial. The rooms are so arranged as to be convenient for all purposes and with a view to economy of space. This house shows what can be done with the small home by tasteful furnishings.



Building & Loan Associations

(Continued from page 75.)

directly in regular and special meetings of the share holders, and indirectly through representatives elected by them to serve as directors or in other social capacities.

Regular meetings of the shareholders are held at least once a year, at a specified time and place, and special meetings may be held upon proper application therefor and due notice to the stockholders. Members unable to attend are represented by proxy, subject to such restrictions as are provided in the constitution and by-laws.

In serial Associations of the neighborhood type, such as are numerous in the east, all payments are made and business transacted at the weekly or monthly meetings, and the evening's receipts are turned over to the treasurer, who is, in such cases, the actual custodian of the Association funds. Under other methods the Association office is open for business during common office hours, and the funds received by the Secretary, who deposits them daily in some bank designated by the Board of Directors.

There is wide variation in the methods under which savings are accepted, but they may be broadly grouped into two classifications,—installment and "lump-sum."

The periodical, systematic saving of small amounts is the accepted basis; larger sums which a member may find it convenient to deposit being accepted under prescribed terms and conditions. So, in the matter of loans, the prevailing system is the long-term loan, or advance payment, on shares backed by a first mortgage or deed of trust security requiring weekly or monthly payment of dues and interest until the loan is liquidated by the maturity of the shares pledged.

Responsibility for loans made is usually vested in the Board of Directors, or a Loan Committee, under the direction of the Board. This action of the Loan Board follows the filing with the Board of a complete application blank, properly filled out, to show the desires of the applicant, and to convey to the Board full information with regard to the security offered; also, to convince the Board of the ability of the borrower to comply with the conditions of the loan desired. Applications for loans, on prescribed forms, are filed with the Secretary, for action by the Board of Directors. These usually constitute the Loan Board, and are the final arbiters in the making of the loan.

This application gives full personal identification of the applicant, and whether he is married or single; the amount of loan desired, and the use to which the borrowed money is to be applied. It contains also a full and accurate description of the property offered as security; requires, in the case of improved property, information as to the size of the building thereon, and full structural details and information as to its purpose and present use. Then there is other information pertinent to the matter in hand, such as the applicant's earning capacity, other indebtedness, amount of

fire or other insurance carried on the buildings offered as security, and the amount of life insurance carried. If the loan is for building a new house the plans and specifications therefor must be filed.

The borrower can follow his own volition in the matter of making application to an Association for a loan, and may require from the latter in advance information as to the form of loan obtainable, together with the terms and conditions under which the Association will loan its funds provided the application is favorably considered. Naturally, such matters as the form of loan, the repayment privileges, commissions and interest rates are matters in which the applicant and the association must be in agreement. The borrower must not permit himself to feel that he has been forced into declaring his personal affairs too much when he makes out his application. It is a thoroughly natural precaution, for the Association on its side must take all proper steps to see that the valuation of the property is properly determined and the validity of the title offered by the applicant determined beyond all question; also, that no liens are pending which would injuriously affect the security of the Association, and that ample bonds and insurance are provided according to the circumstances. In cases where the loan is made for the purpose of building, the Association makes such a provision, through bond or otherwise, as will insure the completion of the building according to the plans and specifications on file, and that all bills of labor and material are paid. Many Associations refuse to make a loan until the house is completed. Others rely upon direct payment to the contractor, or to the laborers and material men for protection against liens. Constant watchfulness must be likewise maintained with respect to insurance expirations, taxes and assessments, and any other matters which if neglected would jeopardize the security held.

Besides loans for building a new house, an Association makes, to a varying extent, other loans known as straight and "split" loans. Straight loans are made for a definite period, say three to five years, with semi-annual or annual interest payment, and the principal coming due the expiration of the loan. This form of loan is desired by those who are not in position to make weekly or monthly payments, and prefer to postpone all payments on principal and shares until maturity. It is favored by business men, who borrow on residence or other property in this manner; it is not suited to the wage-earner. As a rule a straight loan is made to other than the stockholders of an Association, and is confined to cases where the demand from members for the installment funds of an Association is not sufficient to place its available funds. Some Associations require that all borrowers, regardless of the form or size of their loan, shall be at least nominal shareholders of the Association in order to share this borrowing privilege.

A "split" loan is one in which the obligation of the borrower is expressed in successive liens on a property.

The first mortgage or trust deed in such cases is usually a straight loan, payable at a fixed maturity date, the remainder of the loan being expressed in an immediate subsequent lien by mortgage or trust deed under the usual terms of an installment loan. This "split" form of loan offers convenience to those who would be unable in the first instance to carry the monthly payments that would be required on an installment loan for the entire sum. It is far from being in general use, a similar and more desirable result being gained by granting a longer term of installment loan by requiring smaller installment payments periodically on the shares pledged for each loan.

Stock loans may be mentioned here, although they have no application to home-owning. They are a convenience to the savings members of an Association, who may wish to make use of a portion of the money they have accumulated as a credit to their shares. It is customary to loan up to 90 per cent of the book value of a member's shares without any detailed application formalities. The borrower merely executes a note, pledging his shares as security for repayment of the loan.

An important Building and Loan Association development is the refinancing of straight mortgage loans. It has been estimated that 90 per cent of the people of moderate means who have secured straight loans on their property, calling for a lump sum repayment in three or five years, have been unable to make such a payment. This necessitates either a renewal of the loan, or the placing of a similar loan elsewhere, with recurrent inability to pay when due. The Association renders a great service in providing installment payment loans to such persons, through which in a few years they are enabled to own their homes free of debt.

Approval of loans by the Loan Board of an Association is subject, in all cases, to verification of values by a proper Appraisal Committee or expert appraiser and a verification of titles by the attorney of the Association. Execution of the necessary note, bond, mortgage or deed of trust, by the borrower, together with assignment of shares to the Association, and adequate insurance protection, are essential steps in completing the transaction. Not one detail can be lightly passed over by the officials in charge, as absolute safety must be the prime consideration in placing the Association's funds.

In some Associations a Building Committee is appointed to supervise the construction of such buildings as are contemplated in securing loans, the Committee being required to audit and approve payment of bills for labor and material used in such construction.

So it will be seen that, all in all, a Building and Loan Association serves a vital need in every community. Just how well it functions depends upon the amount of support and co-operation it gains from all the interested elements in a community.

The Washington "Better Home"

Replica of the Home Which Inspired "Home Sweet Home" Will
Be Used as Place to Teach Household Economics

THE completion and dedication of the modernized replica of John Howard Payne's celebrated Long Island Home, which was built on the Sherman Monument Plaza at Washington, became an event of nationwide importance when President Harding formally delivered the home to the General Federation of Women's Clubs in the person of Miss Lida Hafford. The home had previously been deeded over to this organization by Mr. L. Porter Moore of the Home Owners' Service Institute which made possible the building of the home.

As it stands this modernized house is symbolical of many things. It is first of all a monument to the memory of the man who paid the most touching tribute of all time to the spirit of home. And having been constructed in accordance with the Dwelling House Code of the Department of Commerce it is in all respects a perfect example of lowest possible costs consistent with the use of durable, permanent, tested building materials. The house also has a third importance in that when moved to its new government site, it will be used as a place for demonstrating modern ideas in household economics.

Visitors who have seen the house since its opening

have been impressed by the success with which the difficult task of preserving the appearance and atmosphere of the original Payne home and at the same time making it a modern house, has been carried out.

Viewed from the outside the home is almost a perfect reproduction of its prototype. But many modifications were of course necessary in the treatment of the interior for the reason that modern advances in domestic science have practically revolutionized the American home.

This is especially true of the kitchen. When the Payne home was built in 1660 the kitchen was the most important and the largest room in the house for it served, due to the fact that there was no central heating system, as kitchen, regular dining room and social center. Unless the occasion was formal the main dining room was never used.

Nowadays compactness is a paramount consideration. In the modernized version of the Payne home, therefore, the kitchen is much smaller but at the same time much better equipped affair than in the original house.

Part of the space that was used for the kitchen in the old Payne home is given over to the living room



Replica of the John Howard Payne "Home, Sweet Home" Original, Erected on Sherman Monument Plaza, Washington, D. C., and Formally Deeded Over to the General Federation of Women's Clubs by L. Porter Moore, of the Home Owners' Service Institute. Donn Barber of New York was the architect.



President Harding Formally Delivered the Home to its New Occupants. Left to Right: President Harding, Miss Lida Hafford (Insert), Chairman, Washington "Better Homes" Committee; Secretary of War Weeks; Mrs. Warren G. Harding.

The Room at the Right is the Living Room, Duplicating as Nearly as Possible the Architectural Treatment of the Original.

in the modernized replica. The space occupied by two downstairs bedrooms is also given over to the living room, with the result that the living room extends the length of the house in the modern manner.

The furnishings are, of course, modern, but they harmonize thoroughly with the house. Other features of the house are its brass piping throughout, tiled bathrooms, modern plumbing, built-in china bathroom accessories, resilient cork tile floor in the kitchen, a special arrangement for icing the ice box from the service porch, cedar lined closets, one hundred per cent lighting and convenience outlets for the electric system, hardwood floors of oak, maple, birch and beech and modern wall finishes of paint, wallpaper and "Sanitas."

The story of the building of this modernized home is a story of the ablest and most complete co-operation between the Home Owners' Service Institute which furnished the motive power for the project and its associate members. In spite of untoward circumstances,

the house was completed within four weeks after the cornerstone was laid.



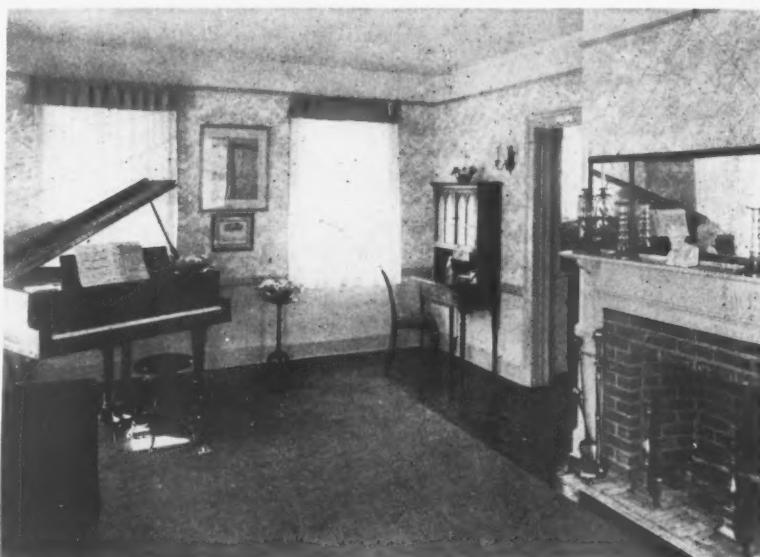
The Fall Is Ideal Painting Season

IN practically all sections in the United States September and October are excellent painting months. Some master painters speak of this season as "the ideal time" and suggest that it even pays to postpone painting until these months. Even if such an attitude is scarcely within the realm of being justified, it is unquestioned that there are no good reasons against fall painting, and the property owner may undertake such improvements at that season with every assurance of satisfactory outcome.

Among the reasons which make fall a suitable time for painting are such factors as these:

(1) The weather is usually fair. There is less apt to be interruptions by rain than in the early spring months.

(2) Surfaces are usually in prime



condition, the drying process of summer having thoroughly made the wood ready to properly take the several coats that are to be applied.

(3) The rush season is past and the supply of competent help is greater than during the busy period.

(4) Workers are more sure to produce a full day's toil for a day's wage as the hot trying days have passed and everyone shows more ambition and ability to work continuously and more painstakingly.

(5) Drying is slower, more even and thus more satisfactory. Proper drying of paint is required to make it a really protective coating.

Beautiful Birch

A Native Hardwood with Handsome Grain and Natural Fragrance, Ideal for Interior Trim, Furniture and Structural Use Generally and Which Takes Stain or Enamel in a Way Which Assures Perfect Finish

By O. T. SWAN

EDITOR'S NOTE: This is the fifth of a series of articles on important finish and structural woods, now appearing in American Builder.

BIRCH is a hardwood which has come to figure extensively in the lumber markets within the last ten or fifteen years and especially during the past five years. It is found in commercial stands chiefly in the Lake States and in New England States and in New York, Pennsylvania and West Virginia. It does not occur in solid stands, but is found scattered throughout the hardwood forests.

Several species of birch are found in these regions, but not all are adapted to the same uses, nor are they competitors in the same markets. Paper or white birch is in common with a large part of the yellow birch in the Northeast used largely in the manufacture of woodenware and novelties. Our chief sources of birch lumber for fine interior woodwork, furniture and fixtures are the yellow birch of the Lake States and the sweet or cherry birch. The former reaches its perfection in Wisconsin and Michigan and these two states have the bulk of the standing timber.

Commercially, yellow birch and sweet birch may be considered in the same class, as their properties are very similar. Birch is exceedingly well fitted for a very large variety of purposes, because of its real intrinsic merits. It gives results which appeal to the eye and possesses excellent mechanical and physical properties. It is somewhat easier to work than oak or maple and yet possesses the same quality of strength as these

two species. It ranks with beech, hard maple and oak in hardness and is very much harder than red gum.

Birch as a wood is unique in that it has no "loud" or pronounced graining. It has just enough grain to

give it the soft beautiful effect now desired by architects and the people of refinement they serve. Some trees produce curly grained wood which when properly finished gives results which are not exceeded in beauty by the most costly imported woods. Selected logs of this handsome wood are cut into veneer by the rotary process which brings out a very pleasing grain, which is sought after by furniture manufacturers and the makers of doors. The curly grain is best brought out by quarter-sawing of select logs and commands a higher price because it costs more to produce.

The absence of pronounced figure, the comparatively fine grain and the light color of the wood give "Beautiful Birch," as it is now commonly known, an advantage in that it is possible to apply almost any manner of finish in a wide range of stains, paint or enamel and to secure through these finishes very superior effects on account of the smooth, hard surface of the wood. Manufacturers having large experience with stains state freely that they secure extraordinarily good results with this wood and painters find it superior as a

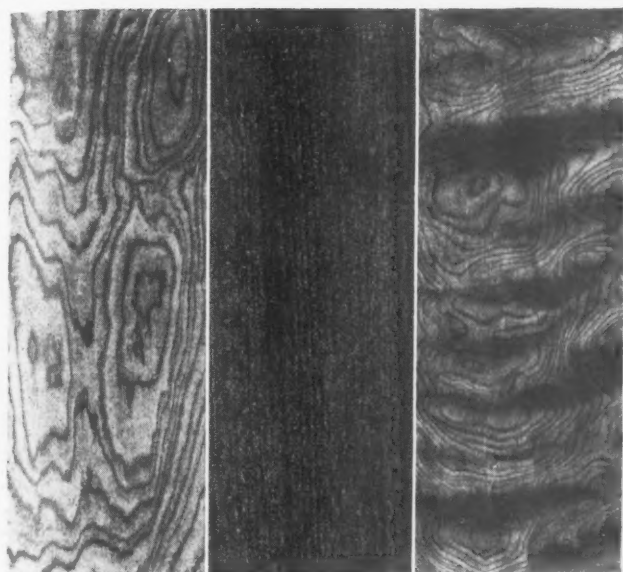
basis for enamel work on account of its smooth, extremely hard surface and freedom from later discoloration. There are no natural elements and chemicals in the wood to work through and discolor the enamel.

Slivery surface and cross grain are practically



Birch Does Not Occur in Solid Stands, But Is Scattered Throughout the Hardwood Forests. The yellow and the sweet birch are chief sources of birch lumber.

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Figured
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Grain

Natural
Birch
Grain

Curly
Birch
Grain

unknown in birch. It excels for turning because it does not break out easily and is otherwise in an advantageous position with respect to woodworking qualities, since it has a smooth even grain which does not rough up. It contains no natural hard crystals which dull tools, and on account of its hardness it takes a high polish.

Birch, stained, should not be considered as a substitute for other colored woods. It has its own individual attractiveness to commend it, whether the stain makes it appear brown, or green, or cherry, or silver gray, or whether it is left unstained in its natural light or dark gold tint. Many beautiful interiors testify to this satisfying beauty of birch, regardless of whether a tinting stain has been used or not, and numberless homes, apartment, hotel or office interiors owe much to their satisfying comfortable effect to the judicious use of birch trim, birch fixtures and birch furniture. It has been specified in the most costly public buildings by architects who had the choice of the woods of the world. On account of its relatively low cost, birch during recent years has also had very wide use by those building moderately priced homes.

An idea of the wide use of birch is seen in the fact that there are fifty-two industries where birch has an application. Boxes and gun-stocks are but two of these, but serve to indicate its versatility.

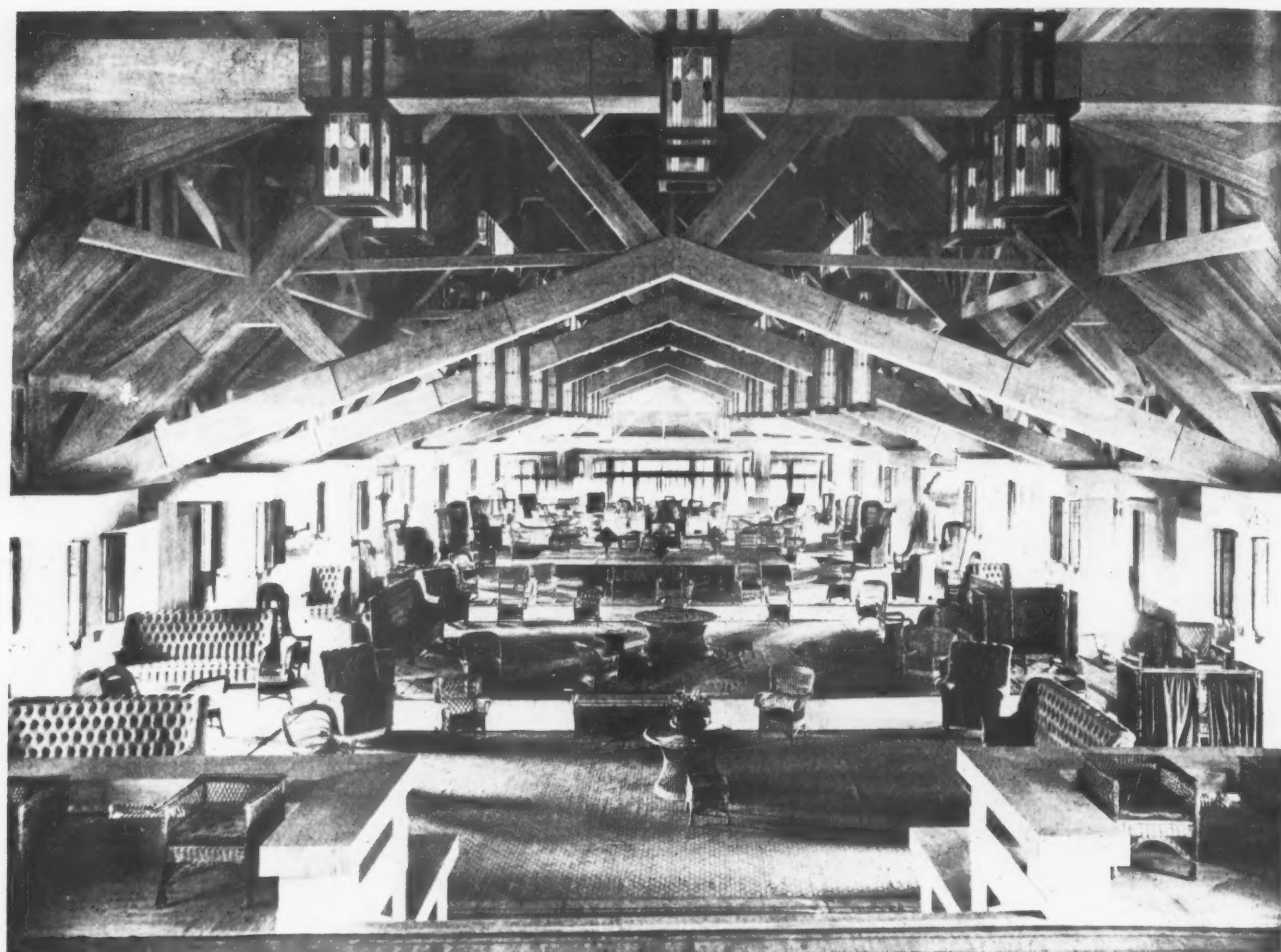
The writer recollects watching a lather in a Wisconsin furniture factory turn out one birch chair spindle after another. The air was fragrant with the sweet smell of the birch, for birch has a well-defined, pleasing scent very similar to that of teakwood: A room finished in birch possesses an elusive,

indefinable scent that gives it character and appeal. This quality, combined with its satin finish, would, were it a rare wood, combine to make it much desired and costly; yet it is here, to our hand, ready to give to our interiors, at reasonable outlay, that beauty we have hitherto associated with some costly, imported hardwood.

Its remarkable variety of figure is another attractive feature of birch. The doors and the panel-work of a room, for instance, would call for a highly figured wood, while the door and window frames and other trim are better in a plainer grain. The sideboard should be ornamental, and the hardwood floors should blend harmoniously with it. Here, for all these uses, birch meets every need, and economically, for partly due to the fact that little of the wood is wasted in working, and because of near location to forests and other conditions, birch is obtainable at an attractive price. Paneling, especially, now so much in vogue, seems never so fully desirable or justified as when done with curly birch veneer. It gives an atmosphere of quiet comfort and luxury impossible to obtain except from rare imported cabinet woods. The beauty of the wood is, in fact, becoming increasingly appreciated on its own account, for it is distinct from and superior in variety to mechanically produced or man-made designs. Birch



Panelled Walls and Beamed Ceiling of Birch in the Dining Room of Mrs. Minturn Pinchot, New York. Wood has been stained but slightly and waxed, giving a delightful, warm tone. Murphy & Dana, New York, architects.



Birch Appears at its Best in This Splendid View of the Lounge of the Grand Canyon Hotel, Yellowstone National Park. Its handling in the roof trusses proves that good construction is essentially pleasing and artistic, and simplicity of use always surpasses the merely ornate in effectiveness.

veneer panels, built up from several thin layers of wood with the fibres running in different directions, resist to the utmost atmospheric changes and are free from any consequent tendency to warp or show those fine cracks technically known as "checks."

Skillfully logged, sawn and seasoned, carefully graded and shipped, birch at last comes to us as ideal wood in the shape of trim, doors, furniture and flooring. Carefully placed and accurately joined by a good carpenter, after specifications by the thinking architect and builder, birch can be relied upon to give a first-class job of woodwork in every respect. Pre-eminently hard and nearly mar-proof, it has the subdued grain desired in modern woodwork, and the required surface for permanent, smooth enamel, or for staining a rich green, autumn brown, pearl gray, forest green or cherry. It always indicates perfect fitness for the use to which it is put.



Birch Has Been Used for the Trim and the Furniture in This Handsome Dining Room in the Residence of Dr. J. F. Percy, Galesburg, Ill. Spencer & Powers, Galesburg, were the architects.

Revising Building Codes (Part 5)

U. S. Government Recommends Minimum Requirements for Small Dwelling Construction with View Towards Simplifying Building Codes

EDITOR'S NOTE: This is the fifth of a series of abstracts AMERICAN BUILDER is making from the report of the Building Code Committee of the Department of Commerce, and is done to give wider publicity to the Committee's Recommended Minimum Requirements for Small Dwelling Construction. The others will follow in succeeding issues.

Wood Framing

ARTICLE V

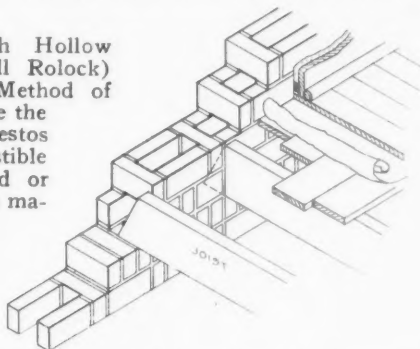
Sec. 24. Beams, Joists, Girders and Rafters.

1. Anchors: Each tier of floor joists shall be securely anchored to masonry walls with T-shaped steel anchors at intervals of not more than 6 feet. Anchors shall be attached in a way to afford easy release in case of fire burning through the joists.

The ends of lapped joists resting upon girders or bearing partitions shall be securely spiked. When abutted they shall be connected with steel traps or dogs.

Joists running parallel to masonry inclosing walls shall be anchored to the walls at least once between

Detail of 8-inch Hollow Wall of Brick (all Rolock) Illustrating Best Method of Joist Support. Note the use of heavy asbestos paper, incombustible felt, gypsum board or other incombustible material between the finish and rough flooring.



bearings with steel anchors. Such anchors shall extend back and engage at least three joists.

Girders shall be anchored to the walls and fastened to each other in a suitable manner with steel traps.

When inclosing walls are of wood each joist, beam, and girder entering same shall be securely spiked or anchored to the wall construction. Where joists rest upon ledger or ribbon boards they shall be securely spiked to the studs.

The roof structure where resting on masonry walls shall have steel anchors not less than four-tenths square inch in cross-section, extending down into the wall not less than 2 feet, and spaced not over 6 feet apart.

2. Support of beams and rafters: Every beam supported by masonry shall have bearing at least 3 inches in length.

The ends of beams resting in masonry walls shall be beveled to release the joist from the wall in case of fire.

Joists carrying non-bearing partitions running in the same direction shall be double. If non-bearing partitions cross joists near the center, these joists shall be of size required for normal loading, with a span 2 feet greater than the actual span.

Note—In this connection the reader is referred to Table II, as printed on page 109 of the July issue of AMERICAN BUILDER, in Part IV of this series.

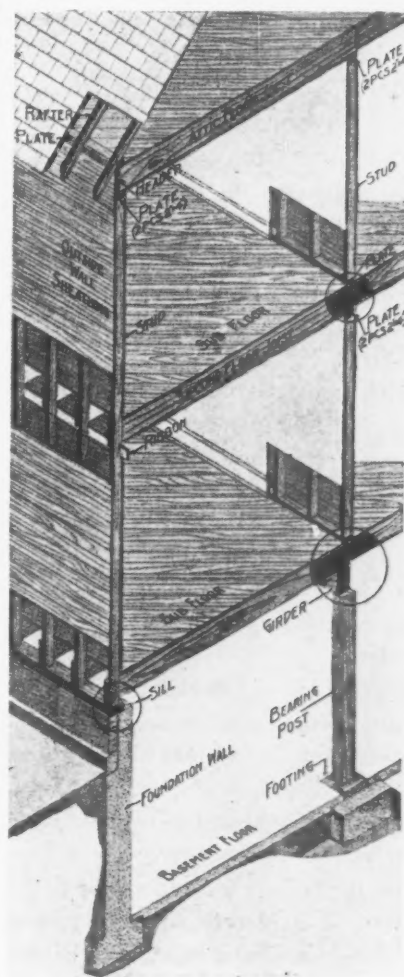
Rafters shall be vertically supported near the ridge when the slope is less than 6 inches per foot and all rafters shall be thus supported unless their feet are thoroughly tied at the plate.

3. Bridging: All floor and flat-roof beams shall be rigidly bridged at intervals not exceeding 8 feet.

4. Separation of beam ends: Wooden beams shall not enter 8-inch brick party or division walls unless recesses for timbers on both sides are provided at the time the wall is built—otherwise a 12-inch wall is required. In all masonry walls the beams on opposite sides shall be so placed as to provide at least 4 inches of solid masonry between them.

Note—The care of lumber prior to use for building purposes and its condition at the time of use often determine to a large extent the value of the building, or the rate at which depreciation will take place. Green or partially dry lumber, when not properly piled, will twist and warp in drying and will retain this twisted and warped condition after being taken from the pile. Green lumber, when closely piled, or stored without ample provision for the circulation of air, is very likely to stain and become infected with decay. This is especially true in warm, damp weather. Decay once started in a timber will quite frequently continue after the timber has been placed in the building, even though it be used in a relatively dry location where a perfectly sound, dry timber would never be attacked by decay. In this respect sapwood is much worse than heartwood, although in the strength of the sound material there is no difference.

When the rough lumber is delivered at a building site but little attention is generally paid to the piling



Wood Shrinks Crosswise, not Lengthwise of the Floor. A dwelling framed as above will in time settle from 1 to 2 inches in center than at walls.

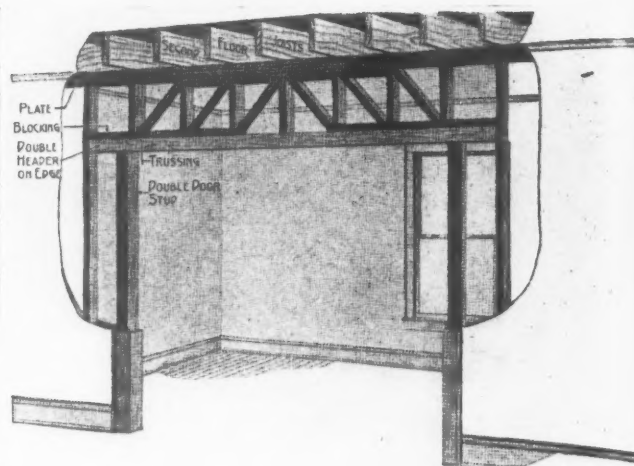
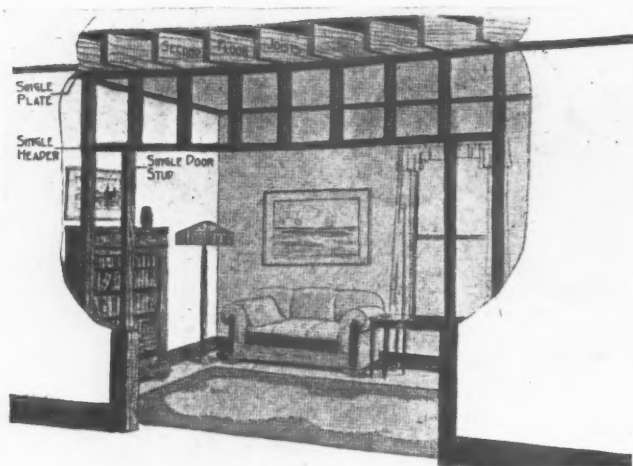


Fig. 1, Left. Inadequate Framing Over Wall and Partition Openings in Fig. 1 Permits Local Settlement, Causes Unsightly Plaster Cracks and Spoils the Fit of the Doors. The precautions shown in Fig. 2, right, help to prevent these undesirable results. Note that the plate, header, and door studs have been doubled, and header turned on edge to afford greater strength. The short diagonal and horizontal members form a truss which provides rigid support for joists over the opening.

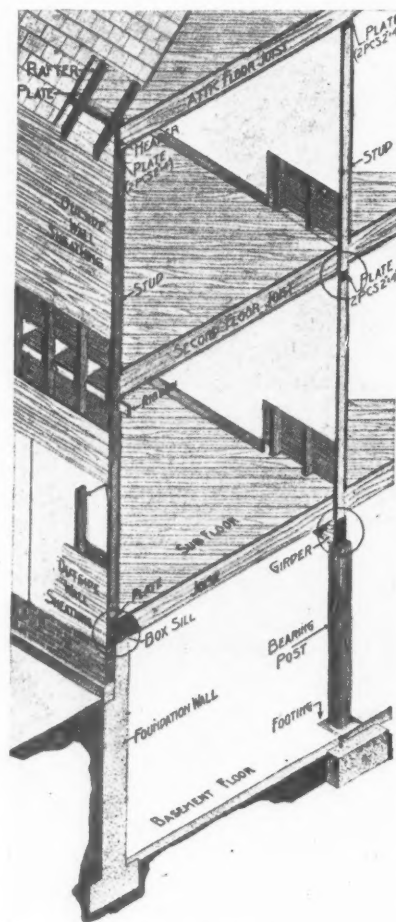
or to the protection of the lumber from rain and sunshine. It is common practice to use some of the building material for concrete forms. This material when removed is not infrequently thrown around in a rather promiscuous pile. The effect on lumber of such treatment, and the ensuing wetting and drying are often quite disastrous, resulting in development of checks, shakes, warping, twisting and cupping. Joist material, for instance, may have been in the very best condition when received, yet practically fall to pieces between the rings under such treatment.

In designing the frame of a wooden dwelling it is important to consider the influence of shrinkage and swelling in keeping the floors level. It is very uncommon for the frame lumber to be so dry when placed in a building that it will not ultimately shrink considerably. This shrinkage may cause considerable trouble, which could be partly eliminated, however, by proper design. For instance, if one end of a joist rests upon a concrete foundation, the other end should not be supported on top of a timber girder, since the girder will shrink and lower that end of the joist. In small houses it is a better plan to place the girder flush with the top of the joists, which can be accomplished by supporting the joists on members spiked to the side of the girder.

When either interior or exterior trim is at too high a moist content when used the joints will open, due to subsequent drying and shrinkage across the grain. If the wood is too wet, miter joints, for instance, will open at the inner corner as the wood shrinks, and if too dry at the outer corner when it swells. If the material is at the proper moisture content when put in position, but if it is placed over wet plastering or allowed to become wet from other causes, the miter joints will first open at the outer corner, and later when the material becomes dry they will open throughout their entire length. The bad influence of shrinking and swelling will be much greater when flat-grained material is used, since flat-grain material shrinks and swells

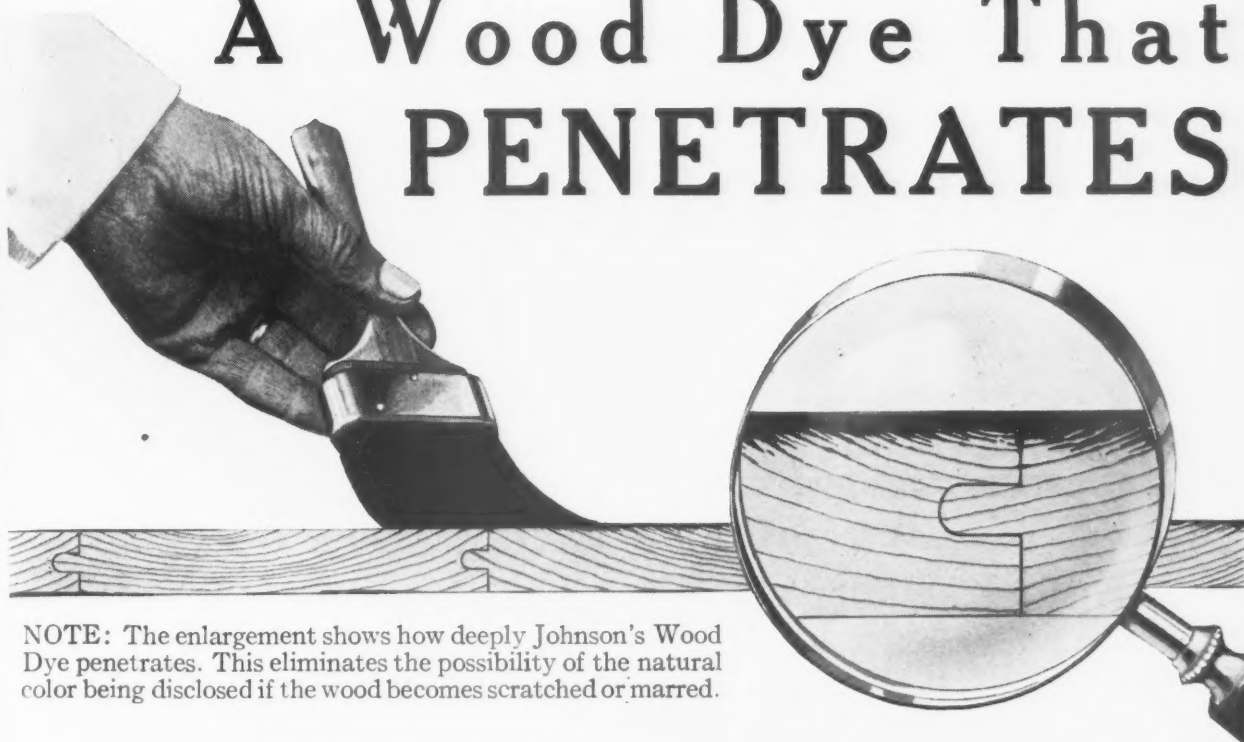
about 50 per cent more than quarter-sawn stock with the same moisture changes. Quarter-sawn material is much less inclined toward warping and twisting than flat-sawn material, and also has the advantage of offering a more uniform resistance to wear. From this it will be seen that quarter-sawn finish, flooring and the like are much superior to flat-sawn material, than when what is usually its chief factor, its appearance, is disregarded.

NOTE: The stiffness of the floor is quite important if the dishes are not to rattle and the plastering to crack. The stiffness of a joint of given span under a given load is proportional to the cube of its height. Thus, if the height is increased by a given per cent, the increase in thickness is more than three times this per cent. This is true as long as it is not so thin and high that it buckles under the load. The stiffness of a joist is but little influenced by the grade of the material. The load which a joist of a given length will hold without breaking varies as the square of the height. The load which a beam or joist will sustain is dependent upon the defects and the quality of the clear wood. It is not good economy to skimp on the height of joists.



If a Building Is Framed to Equalize Total Height of Horizontal Timbers, Their Relative Positions Remain Same After Settlement Occurs.

A Wood Dye That PENETRATES



NOTE: The enlargement shows how deeply Johnson's Wood Dye penetrates. This eliminates the possibility of the natural color being disclosed if the wood becomes scratched or marred.

JOHNSON'S WOOD DYE

Johnson's Wood Dye is entirely different from the many wood stains and tints on the market. With it inexpensive soft wood such as pine, cypress, fir, etc., may be finished so they are as beautiful as hardwood. It brings out the beauty of the grain without raising it in the slightest.

Johnson's Wood Dye is a *dye* in every sense of the word. It contains no finish whatsoever and, like most first class products, it answers one purpose only—it dyes the wood—the finish

must be applied over it. We recommended Johnson's Varnishes or Polishing Wax.

Johnson's Wood Dye goes on easily and quickly without lap or streak. It dries in four hours and will not rub off or smudge. You will find Johnson's Wood Dye a big help in working out color schemes in stained woods. Johnson's Wood Dye is made in 15 beautiful shades, all of which may be lightened, darkened or intermixed. Full directions on the label.

FREE—This Book on Wood Finishing

It's the best book ever published on Artistic Wood Finishing—the work of the famous experts—illustrated in color. This book is written for the practical man—it gives covering capacity, includes color charts, etc. We will gladly send it free and postpaid. Use coupon at right.



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Please send me free and postpaid your Book on Wood Finishing.

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My Address.....

City & State.....

CORRESPONDENCE

*Questions Answered—
Ideas Exchanged*



Our Readers Are Requested and Urged to Make Free Use of These Columns for the Discussion of all Questions of Interest to Architects and Builders

A Spring Bouquet

To the Editor:

Shawnee, Okla.

May we congratulate you on the make-up and general merit of your publication?

It is a credit to your organization and to the business you represent.

E. R. WAITE,

Shawnee, Oklahoma Board of Commerce.



A Problem in Estimating

To the Editor:

Denver, Colo.

In the case of two houses exactly the same except that one is 28 feet by 28 feet and the other 30 feet by 30 feet, how much more would the larger cost? On a cubage basis it would cost nearly 15 per cent more. But would it? Both houses would have same doors, windows, stairs, plumbing, heating plant, angles, hip, valleys, etc., and it is fair to assume that location of partitions and type of roof would permit same timber lengths in quantity survey for joists and rafters.

There would be, of course, certain items that would cost more in the larger house. What, in percentage would this be, about? Or put the same thing in a different way. Suppose that a bid of \$12,000.00 is received for a house 30 foot square. Would it be reasonable to expect to reduce the cost to anything like \$10,500.00 simply by cutting down dimensions so that the structure would cover an area 28 feet by 28 feet instead of 30 feet by 30 feet?

H. W. RUFFNER.



Says Fire and Spray Loosens Concrete in Mixer

To the Editor:

West Branch, Mich.

I see in the March number a request from B. J. King, Hesston, Kans., on how to remove caked concrete from mixer. My way is to build a fire of straw or shavings packed in medium tight. I keep putting in until the drum is quite hot,—but not enough to warp the drum. Then I let it burn out, and I start the mixer, turning the spray. This will crumble the concrete.

SAM NELSON.

Wants Quick Way of Ascertaining Rafter Lengths

To the Editor:

Detroit, Mich.

I wish you would please tell me which is the quickest way to get the length of a rafter for a hip roof house,—also the way to find the length of jack rafters.

RODNEY SMITH.



Old Melodeon Makes Fine Buffet

To the Editor:

Eureka, Ill.

Enclosed find photo of a buffet I made from an old melodeon this winter. I am a brick mason and plasterer by trade.



Buffet Built by Mr. Flanagan from Old Organ.

The candle sticks are made from old railroad passenger coach mahogany.

The buffet is solid walnut throughout with old silver trimming. I have been a reader of the AMERICAN BUILDER off and on for some time.

W. O. FLANAGAN.



Says Puttied Side of Glazed Door Should Face Out

To the Editor:

Fayetteville, Ark.

In the February issue O. B. Buckingham wishes to know which side of a glazed door should be hung out. I don't think he can hang one wrong, and have the bevel on the



10¢



Photographs and floor plans of 60 unusual brick homes—selected from thousands for beauty and interior arrangement. Every one has been actually built and lived in. A house for every taste and purse.

Over 5000 Builders Have Bought these Books

If you haven't copies of these two books you're missing something that has proved unusually popular with builders. "Your Next Home" is particularly useful. It shows sixty excellent homes in picture and plan. Gives you ideas, helps your prospects decide what they want, and illustrates the Beauty of Common Brick construction. Send 35 cents for both books. Why not do it today.

25¢



Valuable tables of material and labor costs. Illustrations and data on modern, money-saving uses of common brick—including the Ideal Hollow Wall. Thousands of these books are in use by architects, builders and dealers.

Common Brick Wins Its Way Into Exclusive Home District

THE distinctive beauty of Common Brick has created a new demand for this ancient building material among people who consider price incidental. In the most exclusive district of one of our big cities many new homes have been built with Common Brick.

Here is a novel exterior, unusually distinctive and attractive. Note the interesting play of light and shade—the irregularly staggered brick contrasting with those around the windows and doors.

A most pleasing home—yet far less costly than the average man would think. For it's our good old friend Common Brick—lasting beauty and low first cost.

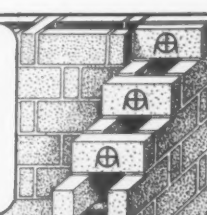
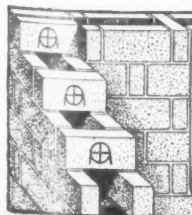
The Common Brick Industry of America

2131 CLEVELAND DISCOUNT BUILDING

Cleveland, Ohio

The Ideal Brick Hollow Wall

Made of standard brick—cuts the cost one-third



glass right, or the drip cap and moulding—if there be any—on the outside. And I am sure the putty with which the glass is bedded should be on the outside. In order to have it so he should hang the door with the solid moulded side out. If the putty is not outside the water will run in around the glass, and the result will be a rotted lock rail in a very short time. If Mr. Buckingham will examine the various designs of doors I think these facts will be self-evident.

K. E. PAULK.

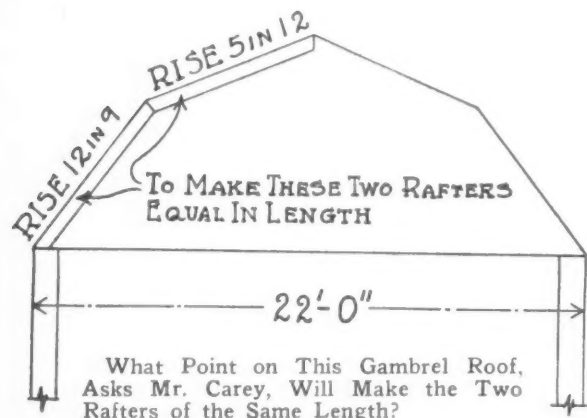


Raftering a Gambrel Roof

To the Editor:

Moosic, Pa.

I would like to know if some brother carpenter can tell



me the method of finding the point on a gambrel roof to make the two rafters the same length like the cut herewith.

W. CAREY.



The Ins-and-Outs of Door-Hanging

To the Editor:

Centralia, Ill.

I see by the papers, as T. E. Powers would say, that someone has kicked up a fuss again by asking, "Which side of the door should go to the outside?"

This is a twin sister to the one, much discussed, but never fully decided, "Which side of the screen door should go to the outside?"

As you have never gotten mine on either one I will let you have it now on the both, and then you can agree with me or let it alone, just as you like.

First as to the front door.

On doors of special design or where special ornaments are attached there can be no argument, but they do not enter the question, but where the only difference is the solid or the nailed-in mould, my idea would be to let the crown decide which side in. My experience is that it makes a much better job to have the crown or belly to the inside so that when the door is closed the top and bottom edges strike the stop or rabbet first and the lock holds it up tight. I lay enough stress on this point as very important. I have had doors that had ornaments nailed on, but were crowned the wrong way; I pulled the ornaments off, and put them on the other side.

Doors will draw towards the inside away from the stop a great deal, even when being the other way, without hanging them that way to start with. As to the nailed-in part of the mould, if it is a neat job, it should not be discernible after it is all finished.

And now for the screen door. A good idea is to set two doors of the same design together, one one way and the other one the other way; that will give you a very good idea which side looks the best out. But unless it is a very exceptional case I say put the screen to the outside. If you were to pass a house, where the window screens were hung with

the wire inside, you and ninety-nine and seven-eighths out of every hundred (and I would join the majority) would agree that the fellow who committed this belonged in the "bug house." I can't really see anything in favor of hanging the door differently to window screens. The argument of one writer, that it is easier to keep the fly out of the house if the screen door is hung with wire in doesn't carry much weight with me, as it is my observation that the fly that is sitting on the door will ride with it, and make no attempt to get in unless you do. (As I have seen some half-witted people do when the doors are covered with flies: First take your hat or a newspaper, or the kitchen apron, and stir and shove up every son-of-a-gun one of them and then open the door and take them in with you!)

Nearly all flies that are taken into the house, when coming in through the screen door, are those perched on the door casing and which the suction of air—which you create when moving forward—carries along. Watch that and see if it isn't the fact.

I thank you.

A. C. SCHNAKE.



Unusual Social Center

To the Editor:

Bottineau, N. D.

I am sending you a photograph of the Social Service building of the Presbyterian Church, this city. It is 150 feet long, 68 feet wide and 35 feet high, has a self-supporting



Social Service Building, Presbyterian Church, Bottineau, N. D., 150 Feet Long, 69 Feet Wide, 35 Feet High.

roof, with rounded ends, as shown. It is used in winter for ice sports, and in summer for community events and athletics.

R. C. CROUCH.



Says Steel Sash and Frames Increase Plumb Line Work

To the Editor:

Greenville, S. C.

In the March issue of your magazine there is a very interesting article under the title of "Quicker Window Setting". Now there is no question but that steel sash and frames have their place in building construction and are here to stay but here is one old brick foreman who does not agree with the author that it is a labor saving device.

Perhaps (?) it may save a little time for the carpenter, but it is the experience of the writer, that it is more than balanced by the extra mason labor trying to carry the jambs plumb. All the steel sash the writer has bricked in have had 1-inch L stiles and the brickwork is supposed to show approximately one-half margin. This calls for perfect plumb-ing (just finished a job with sash 12-0 inches high) on the part of the mason or the margins show up bad. Perhaps where Mr. Harris lives all bricklayers do perfect work but I'm here to say that it isn't so down in this neck of the woods.

W. E. CLINTON.

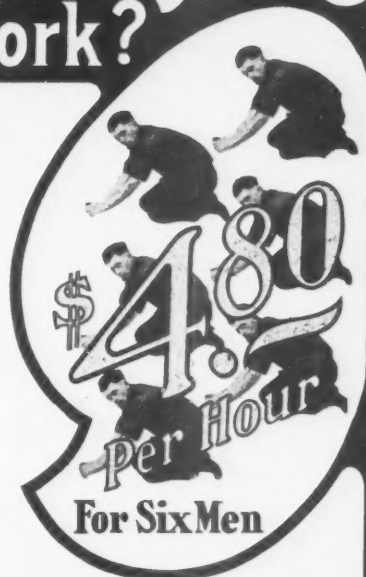
How Much are *YOU* Paying For Your Floor Surfacing Work?

90¢
Per Hour;
More Work and
a Better Job
The American
Universal
Way

Why pay SIX men when ONE can do it?

The Contractor who does his floor surfacing by hand is wasting profits equal to the wages of five men.

In these days of close figuring you can't afford to have six good mechanics doing the work one common laborer can do with the



American Universal FLOOR SURFACING MACHINE

With the AMERICAN UNIVERSAL FLOOR SURFACING MACHINE a common laborer can surface as much floor in an hour as the six best mechanics on your pay roll. And he'll do a better job, for the work of the AMERICAN UNIVERSAL FLOOR SURFACING MACHINE is positively uniform—free from all imperfections, chatter marks, etc.

The difference in the cost of the job means a substantial profit on work ordinarily done at a small profit or at a loss by hand.

Approximately ninety cents per hour covers the cost of labor, machine, garment paper and electricity in surfacing floors the AMERICAN UNIVERSAL WAY. Compare the cost with the cost of six of your best men. The difference is the profit you should be getting—profit others are getting.

Surfacing Floors as a Business

Many contractors who have bought AMERICAN UNIVERSAL FLOOR SURFACING MACHINES for their own work have found it easy to get the floor surfacing work of other contractors in their locality and at profitable prices.

Others have built up a permanent and profitable business by specializing in the surfacing of old and new floors. In either case the sturdy construction of the AMERICAN UNIVERSAL FLOOR SURFACING MACHINE, the high quality of its work and its economy of operation means substantial profits for its owner.

What the American Universal Will Do

One of the exclusive features of the AMERICAN UNIVERSAL FLOOR SURFACING MACHINE is the elimination of the tilting feature common to other machines.

Our machine rests solidly on its own truck wheels and the cutting depth is easily regulated with a lever on handle of machine. This feature explains why the AMERICAN UNIVERSAL FLOOR SURFACING MACHINE leaves no waves in the surfaced floor. There are many other important features exclusive to this machine; entirely self-adjusting; edge sander drum enables operator to finish floors flush with the walls with no hand work; 5-day trial offer; positive guarantee, etc.

Write today for prices and complete information on how the AMERICAN UNIVERSAL FLOOR SURFACING MACHINE can cut your pay-roll and increase your profits.

The American Floor Surfacing Mach. Co.
Originators of Floor Surfacing Machinery
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Mail This Coupon NOW!

American Floor Surfacing Machine Co., 515 S. St. Clair St., Toledo, Ohio
Send me at once, without obligation, full information on how the American "Universal" can make big profits for me. Also tell me about the 5-DAY FREE TRIAL OFFER.

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Saving Time and Erection Cost by Installing Steel Sash Units

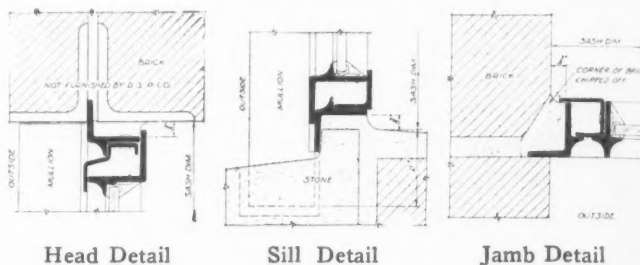
By N. A. HARRIS

THIS daylight jewelry factory of Weyhing Brothers, Detroit, is typical of many small jobs on which the total erection time as well as the erection cost can be materially reduced by installing steel sash units.

They are easily inserted into prepared openings after the walls are up and the roof is on. Their use eliminates the unavoidable delay in the completion of masonry work due to setting and bracing wood windows and assist the builder to accomplish more by permitting the masons to get onto the next job in quicker time. The installation of these windows, as in the case of an elevator erection, may be turned over to an erection company at an actual saving in time and money for the contractor. In this particular instance, the entire cost of installation of all the windows is less than \$40—an amount that practically any contractor would be glad to pay to relieve himself of all responsibility.

In preparing the masonry openings for the sash units, care should be taken to have the dimensions

equal to the sash dimensions, plus 2 inches for each T-bar mullion that is to be used. In laying up the jambs for a single unit opening, leave a rebate large enough to accommodate the sash legs. To prepare



Head Detail

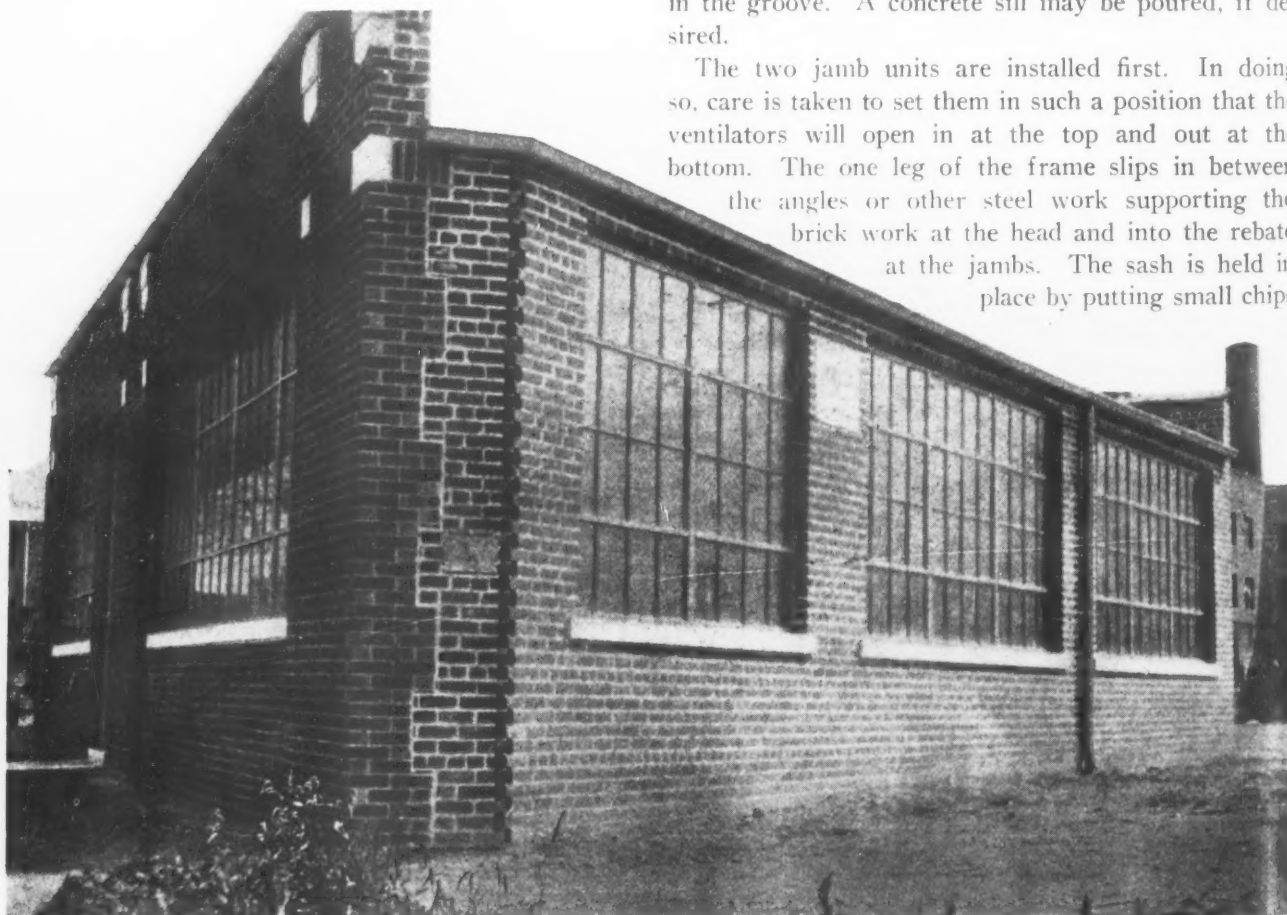
Sill Detail

Jamb Detail

this rebate, chip off a corner of the bricks as shown in the jamb details, or better yet, construct a 1-inch offset jamb.

When two or more units are to be used in an opening, a suitable rebate or revel may be built into the jamb by setting a lath in the mortar joints as the wall goes up. Place the stone sill so that the stem of the mullion to which the sash units are fastened will set in the groove. A concrete sill may be poured, if desired.

The two jamb units are installed first. In doing so, care is taken to set them in such a position that the ventilators will open in at the top and out at the bottom. The one leg of the frame slips in between the angles or other steel work supporting the brick work at the head and into the rebate at the jambs. The sash is held in place by putting small chips



Jewelry Factory of Weyhing Brothers, Detroit, Mich. An example of the small construction job where the total erection time as well as the erection cost can be materially reduced by installing steel sash units. These were easily inserted into prepared openings after the walls were up and the roof on.



See this Key ?

Just a metal strap—a simple device on each Genasco Latite Shingle—but it solves your asphalt shingle problem completely.

No more warping or curling by the sun. No more flapping or turning up by the wind. Genasco Latite Shingles lay flat and snug—stay water-tight and wind-tight—**because they're locked together.**

What is equally important—they are artistic in shape, beautiful in coloring, and their low cost makes them available for any type of building, home, industrial or farm.

Like all roofings of the Genasco Line—Latite Shingles are made of tough-fibred asphalt felt heavily waterproofed with Trinidad Lake Asphalt Cement, a product of the ages.

The success of Genasco Latite Shingles has been unprecedented in the roofing trade. Builders are enthusiastic. They say every Latite roof is a salesman—a business getter. Write at once for booklets describing these wonderful shingles and other Genasco Ready Roofings.

GENASCO LINE

Trinidad Lake Asphalt
(For streets and roofs)
Standard Trinidad Built-up Roofing
Bermudez Road Asphalt
(For road building)
Genasco Roll Roofing
Genasco Sealbac Shingles
Genasco Latite Shingles
Genasco Vulcanite Mastic Flooring
Genasco Acid-Proof Paint
Genasco Industrial Paint
Genasco Asphalt Putty
Genasco Asphalt Pipe Coating
Genasco Asphalt Fibre Coating
Genasco Tile Cement
Genasco Waterproofing Asphalts
Genasco Waterproofing Felts
and Fabrics
Genasco Battery Seal Compound
Genasco Mineral Rubber
Genasco Flotation Oils
Genasco Motor Oils
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Genasco Saturated Asphalt Felt
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Genasco Insulated Paper
Genasco Red Sheathing Paper
Genasco Stringed Felt
Genasco Wall Lining
Iroquois Road-building Machinery



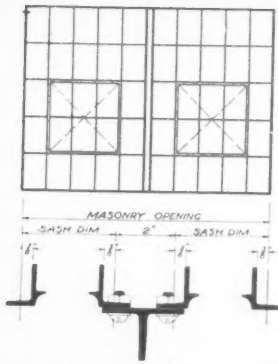
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Asphaltic Roofing, Flooring, Paints and Allied Protective Products



Combining Units with T-Bar Mullions.

permit easy adjustment of the units. The head, jambs and sill are then grouted in. When a stone sill is used, the groove in which the stem of the T-bar mullion sits is grouted in to secure anchorage.

The wires holding the ventilators shut are removed. Hardware is attached, bed putty is laid, the glass is put in place and held by glazing clips and the face putty applied.



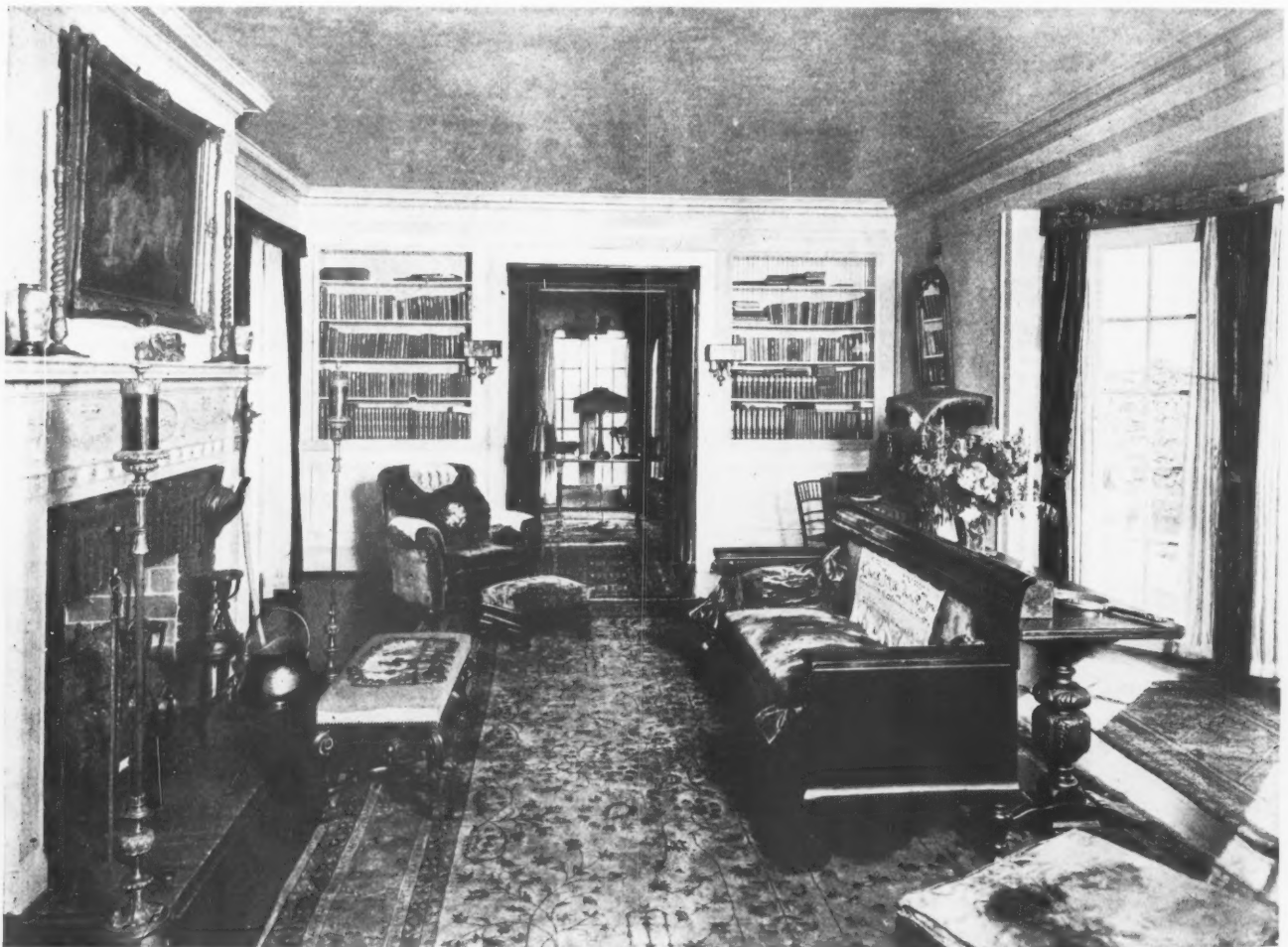
Bookcases and the Better Home

THE problem of the most suitable arrangement of bookcases will repay study in order to render them acceptable adjuncts of any room in which

they are to be used and fitted into. Also by attaining this suitability of arrangement, the bookcase can become a real addition to the comfort and appearance of the room, as well as an important part of the cultural life and atmosphere of the family. In the living-room above, which is blessed with being lengthwise the house and away from the front door and more provocative of study, the position of the shelves across the end of the room in a space only broken by the doorway, is both artistic and useful. The shelves serve the place of any furniture that might be needed on this end of the room, the books are compactly placed, and easy of access. Book shelves built into the house in this manner bear a distinct superiority over bookcases as pieces of furniture in added substantiality and architectural beauty.

Further than this, the architect who succeeds in selling his clients these smaller and more subtly pleasing building features, will, not only have the pleasure of witnessing the enthusiasm of his clients over the new home, but will be rewarded with their permanent satisfaction in a real home. The pleasure caused by mere newness is often short-lived. The joy in a home filled with the comforts resultant of sincere thoughtfulness increases with time, and is the architect's best advertisement.

E. BETHEA MARLOW.



In This Living Room the Book Shelves Serve the Place of Any Furniture that Might be Needed on the End of the Room, and their Position in a Space Broken Only by the Doorway is Both Artistic and Useful.

440 pages of practical help for HOME BUILDERS



How to avoid the home-building mistakes that cost fortunes each year

The best of us can learn a good deal from the rest of us. "Building With Assurance," (second edition) the Master Book, gives you the experience of men who have spent years in the home-building business. It is a big, fine 440-page collection of authoritative, practical, home-building ideas, plans and methods; a volume designed expressly for contractors and home builders such as you; a book that ends groping in the dark—that actually helps you plan ahead wisely, reduce waste, and guard against loss.

"Building With Assurance"
Indorsed by over 15,000
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Countless letters praising this wonderful book have been received from architects, contractors, dealers and home builders. They write for example:

- "The book is truly a masterpiece"
- "It means better, prettier homes"

- "Can't conceive of anything finer"
- "Makes home planning much easier"
- "A true home-builder's guide"
- "The book is indeed a gem"
- "Surpasses other building books"

Building authorities everywhere use it for reference. Can you afford to be without it?

Beautiful Homes

in colors—with floor plans

Whether the home is to cost \$3,000 or \$50,000, you will get help from the many beautiful homes shown in the Master Book. There are French, Spanish, Modern, Western and other bunga-

lows; Georgian, Victorian, Tudor, American, Colonial and other houses. All are shown in beautiful colors, with floor plans. You get the help of authorities on arranging living room, dining room, bedroom, hall, etc. The Master Book, together with the price supplement, give you full information when choosing doors, sashes, stairways, built-in furniture, etc. You have stabilized, standardized prices for making estimates. You can show your client exactly what you plan to use.

Mail Coupon for Prospectus

"Building With Assurance" Second Edition is not for general distribution. It is for contractors and builders. Our prospectus tells all about it—shows beautiful homes with floors plans, reproduces actual pages, letters from readers, etc. The prospectus is gladly sent to those who mail the coupon.

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Gentlemen: I am a contractor, so please send me at once copy of your beautiful prospectus, which describes "Building With Assurance."

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Address.....

Town.....State.....

AM. B.—823

MOTOR TRUCKS and TRAILERS



Making Trucks Yield Profits

BUILDERS and contractors know, by the very nature of their business, a great deal about mechanical equipment. But it is true that when it comes to the question of haulage they are often seemingly at a loss as to the selection of the best trucks for their business.

Good judgment tells you not to consider low-priced, light-weight trucks. Price may appeal temporarily, but such a cheaply-constructed truck simply cannot stand the strain of contracting and building work. Experience has driven home this fact at considerable expense to many.

The initial cost of high-grade trucks is necessarily higher, but in the long run they are the best investment. They give dependable service, stand up better, require less repair-shop attention, replacements are less frequent, and depreciation is less. As a result, operating and maintenance costs are materially lower in the long run.

It may be that there are localities where the horse cannot be superseded satisfactorily, due to particular conditions. But the competitive nature of the building business today is such that truck haulage, and lots of it, and done speedily, is vital if the builder and contractor is to see a fair margin of profit on the contract.

A good truck makes short work of moving supplies, equipment and shifting these from one job to another. Temporary replacements from one job to another can be done quickly, and the work kept moving. In many cases the workmen can be picked up in the morning

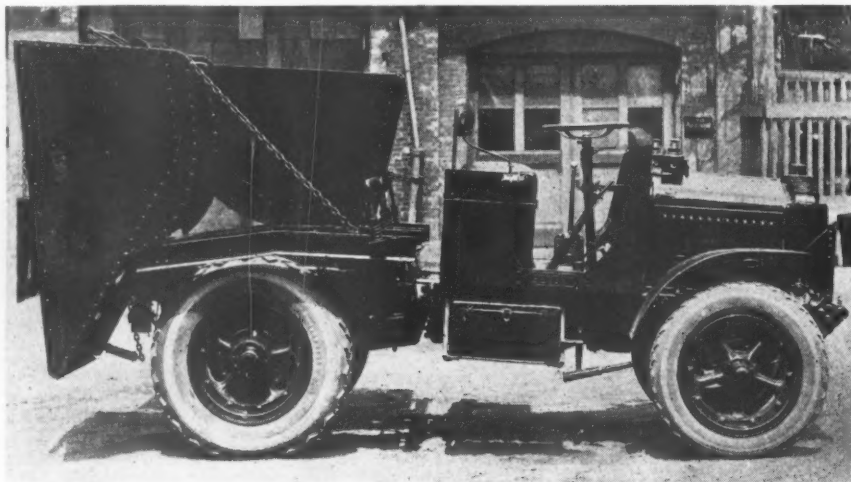
and given a free ride to the job, easing matters all around, and insuring no absent check-marks in the time book.

There is another aspect of this problem, and that is the saving in overhead cost aside from the truck itself. The use of a truck means that the contractor's and builder's equipment can be stored in a location where rent is cheap, instead of having the storage yard in a higher-priced location. Flexibility of service is another thing to bear in mind. Most good trucks can be equipped with wide varieties of bodies, and trailers used when necessary.



Hopper Truck with Short Wheelbase Adapted to Restricted Spaces

HERE is a special type of motor truck body equipment which can be mounted on any make of chassis by making certain adaptations in the frame and chassis. It will be noticed in the illustration that the



The Body of This Truck Is of the Dual Hopper Type, Each Hopper Having One Yard Capacity. Dumping is by gravity fall. A good truck for conveying sand and gravel; excellent for road-building.

truck is of particularly short dual hopper construction, enabling the truck to be driven in narrow and confined places where the usual type of dump truck cannot operate. The body is of the wheelbase con-type. Each hopper has a capacity of one yard, and is so designed that a

hoisting device is unnecessary, since the weight of the load in the hopper causes the dumping action when the catch hold is released. This type of body has been found of special value in hauling road-building materials and it may be said to give best results when mounted on a two-ton chassis.

P. L. SNIFFIN.

Check up on depreciation in buying your next motor truck. **FEDERAL** Modern Designed Trucks are built to last longer and operate for less money



In the Building Field

Federals are helping to make building records. Fast deliveries always certain to get to their destination make Federals desirable. The Horning Coal and Supply Co. of Cleveland use this Federal Fast Express.

Write for booklet S27 "Making One Thing Better"

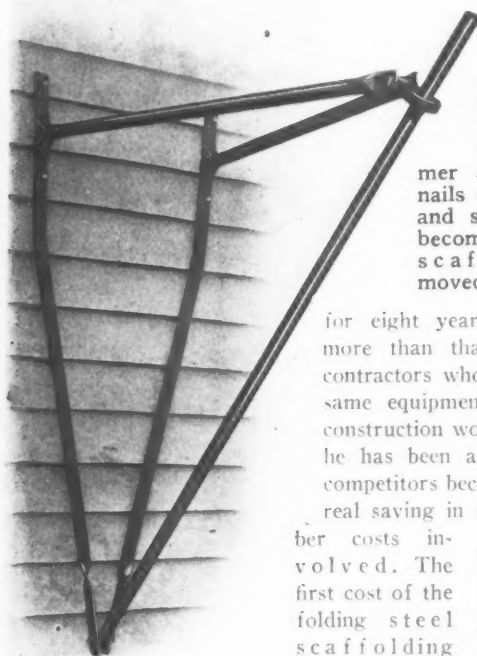
FEDERAL MOTOR TRUCK COMPANY
Detroit, Michigan



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Keeping Scaffolds Up and Costs Down

BUILDERS, with an eye open for cutting building costs, are getting away from the practice of rebuilding scaffold brackets for each job. Instead, steel brackets are used. They are stronger and safer in every way and can be used over and over again. One contractor finds that his steel scaffolds, bought eight years ago, are still in A-1 condition, and good



The First Cost of a Steel Bracket Is Spread Over So Many Jobs That It Is a Very Small Item. A hammer and a few 8d nails make this safe and secure; shifting becomes easy, when scaffold must be moved.

for eight years more—maybe more than that. Like other contractors who wisely use the same equipment in their own construction work, he finds that he has been able to underbid competitors because of the very real saving in scaffolding lum-

ber costs involved. The first cost of the folding steel scaffolding brackets has been spread over so many

jobs and so many years that it becomes a very small item, but a very big charge on the profit side of the ledger.

Then, too, wood scaffolding is often a source of actual danger to the men on a job. The safety codes of many states as applying to building construction are almost wholly directed toward efforts to correct improper scaffolding erection. Compare this with the simple folding steel bracket illustrated.

Any workman can put up these brackets rapidly with a hammer and a few 8d nails. Two men can put up nine or ten in an hour. It isn't necessary to cut holes in the wall or

make any difficult or elaborate preparation. And the shifting of the brackets is easy; they can be raised or removed to another part of the building going up, or despatched, as finished, to other building work which may be under way.



That Tapestry Roof Effect—How to Obtain It

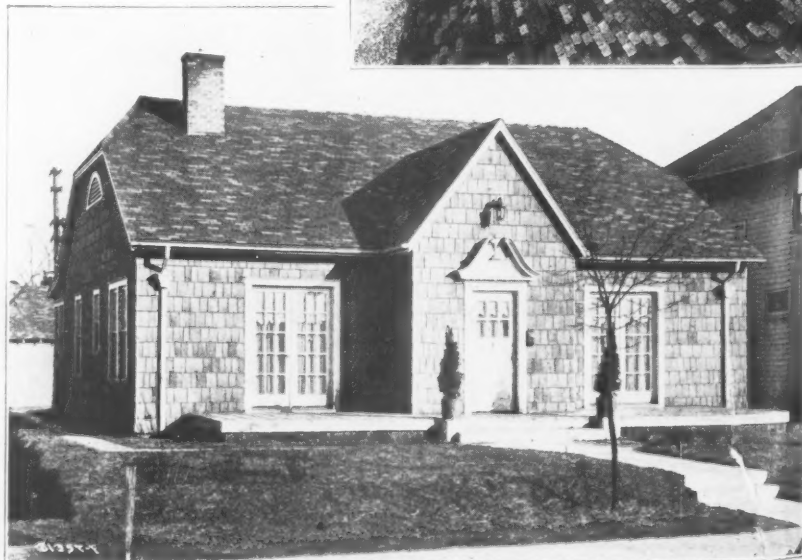
TAPESTRY roofs, offering as they do an unusual blending of colors, have opened a new field for beautiful and artistic use of asphalt shingles.

This new roofing effect recommends itself not only because of its beauty, but because of the simplicity with which it can be applied. It is not another "trick" shingle, but merely the mixture of regular individual shingles in all the usual colors.

The variety of shades offers the greatest possibilities for color blending in this type of roof.

The tapestry roof effect is very easy to develop. However, care should be exercised not to make the mixture of shingles become mechanical in appearance. To get the beautiful effect of the tapestry roof, set a bundle of each kind and color in a row, then deal into a pile (one at a time), 40 per cent blue-

Beautiful Tapestry Roof Effect Gained by Distributing Blue - black, Green and Red Composition Shingles in Odd Piles and Using as They Come.



Beautiful Bungalow at Indianapolis with Tapestry Effect Asphalt Shingles; Ralph R. Reeder, Contractor.



Compact—Flexible—Full-Powered Ideal for the Work in Hand

Contractors and builders are enthusiastic in praising their GARFORDS for their compact design, ability to get in and out of "tight" places and strong pulling power.

GARFORD Engineers are performing a valuable service to this important field of haulage, by making sound, practical recommendations not only as to the chassis and engine of correct size and power, but as to the best body designs.

If you will write them about your own

specific conditions they will give you the benefit of their broad, comprehensive knowledge of haulage in contracting and building work. They will show you the wide variety of body designs available and advise you as to the type best suited to your requirements.

Such consultation costs you nothing. But it is not only possible, but probable that it will mean a big saving in this important part of your work.

The Garford Motor Truck Company, Lima, Ohio

Manufacturers of Motor Trucks 1 to 7½ Tons

GARFORD

DEPENDABLE TRANSPORTATION

blacks, 40 per cent greens and 20 per cent reds. In applying take shingles from the mixed pile *as they come*. The natural tendency is to sort the shingles—if two or three of the same shade come together, lay them just that way. Do not sort the shingles. ❖

This Mechanical Cabinet-Maker Does Ten Men's Work Cheaply

THIS machine is worth being termed a mechanical cabinet-maker, for almost every practical woodworking operation is possible through its use. It is a wonderfully simple machine considering its wide range of usefulness, and is so small and light that it can be taken to the work, instead of taking the work to the machine.

For planing and tenoning it is unsurpassed, taking as it does extra thick and extra thin lumber with ease, and turning out work that is shipshape and perfect in every respect. The saw table permits all circular saw operations, including grooving and dadoing. It has a jointer, with every adjustment for square and beveled work. The boring table gives all adjustments required for boring, mortising and carving, and the speed spindle is adapted for disc sander, tool grinder, buffer, etc. It is five machines in one; does the same work that ten skilled workers would do using hand tools, and by the eliminating of this costly hand labor creates a good profit balance for the builder and carpenter using it on the job.

An idea of its simplicity may be gained from the fact that the saw table, jointer, planer and boring table are so arranged that four men could work the machine at once without being in each other's way.

The machine is made of heavy cast iron and steel—strong and durable. There is no riveted or welded framework to come loose under the vibration of high speed or the jar of moving. Each of the main bearings are self-aligning, two-*race* ball bearings, and self-oiling. There is no babbitting to wear out; no chance of side-play or end-play. The machine comes with either countershaft with tight and loose pulleys and shifter, or a motor coupling, by which a motor may be connected direct. A 1 hp. motor is recommended. The machine is reasonably priced, and comes supplied with all special tools required.

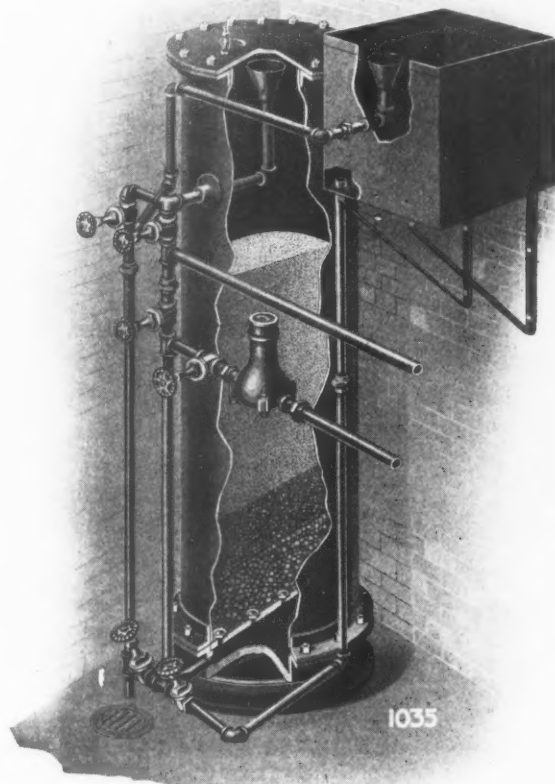
Saw Table, Jointer, Boring Table, Speed Spindle Make This Mechanical Cabinet-Maker Efficient and Economical.



Made of Heavy Cast Iron and Steel and with Ball-Bearings on Main Bearings, Machine Is Stout, Durable, Smooth - Working and Stays in Order.

A Water-Softening Device

AS is well known, calcium—or lime, as it is called—and magnesium salts make water hard. It is the replacement of the calcium and magnesium from these salts by the sodium



The Zeolite Water Softener Consists of Essentially Two Parts—the Softener Itself, a Steel Shell Container for the Zeolite, and a Salt Regenerating Solution Tank.

base of zeolite that makes water soft. Zeolite is the geological name of a mineral that is a hydrated silicate of aluminum, combined with an alkali or an alkaline metal, or both. It is the property which this mineral possesses for exchanging its base for another base that has led to its employment by one manufacturer in the field of water softening. The zeolite water softener consists of essentially two parts—the softener itself, a steel shell which acts as container for the zeolite mineral, and a salt regenerating solution tank. Hard water enters at the top of the softener and passing downward itself, a steel shell which acts as container for the zeolite. Water softeners are made in a wide range for any capacity and suggest themselves for laundries, textile mills, tanneries, ice plants, bottling works, boiler rooms, hotels, institutions, etc.

All-Steel Carpenter Cases Lined With Wood

THERE is no gainsaying the easy carrying qualities and compactness, to say nothing of the neatness and attractiveness, of these strong and well-made tool cases, lined with three-ply wood veneer. There are no unsightly reinforcements on the outside to catch the clothing, and the kit is finished in durable brown baked enamel, and fitted with standard make locks and catches.

Inside the saw racks are hinged on the lids and securely

ASBESTONE EVERLASTING STUCCO

How Many Pounds of Stucco Plaster Do You Get to a Ton?

The average buyer receives 2000 lbs., but when you order 1 ton of ASBESTONE Everlasting Stucco you receive delivery of 2375 lbs. of material, twenty 100 lb. sacks ASBESTONE Everlasting Stucco plaster plus 375 lbs. flake magnesium chloride.

Full weight combined with a quality product

ASBESTONE Everlasting Stucco is unsurpassed in covering power, unequalled in tensile strength, resiliency and elasticity.

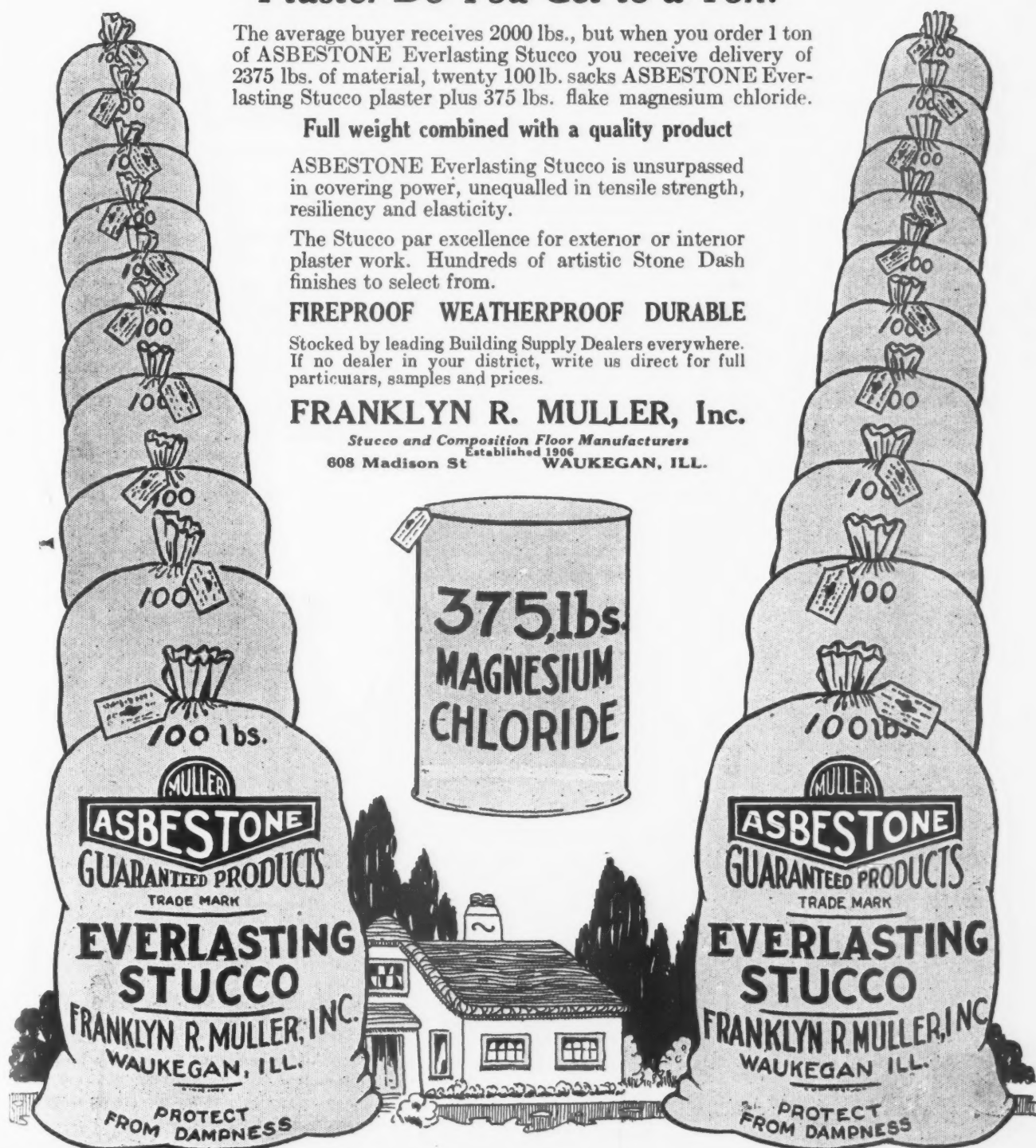
The Stucco par excellence for exterior or interior plaster work. Hundreds of artistic Stone Dash finishes to select from.

FIREPROOF WEATHERPROOF DURABLE

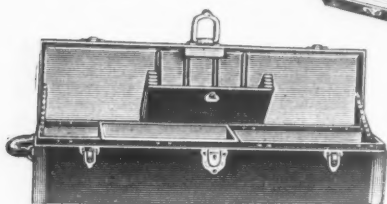
Stocked by leading Building Supply Dealers everywhere. If no dealer in your district, write us direct for full particulars, samples and prices.

FRANKLYN R. MULLER, Inc.

Stucco and Composition Floor Manufacturers
Established 1905
608 Madison St. WAUKEGAN, ILL.



Prepared Steel Carpenter Kits That Will Not Warp, Split or Go to Pieces, Are Reinforced at all Points of Strain and Are Reasonably Waterproof. Handily Arranged Inside, and Are Easily Carried.



fasten when the case is closed. This not only protects them, but puts them where they can be most easily

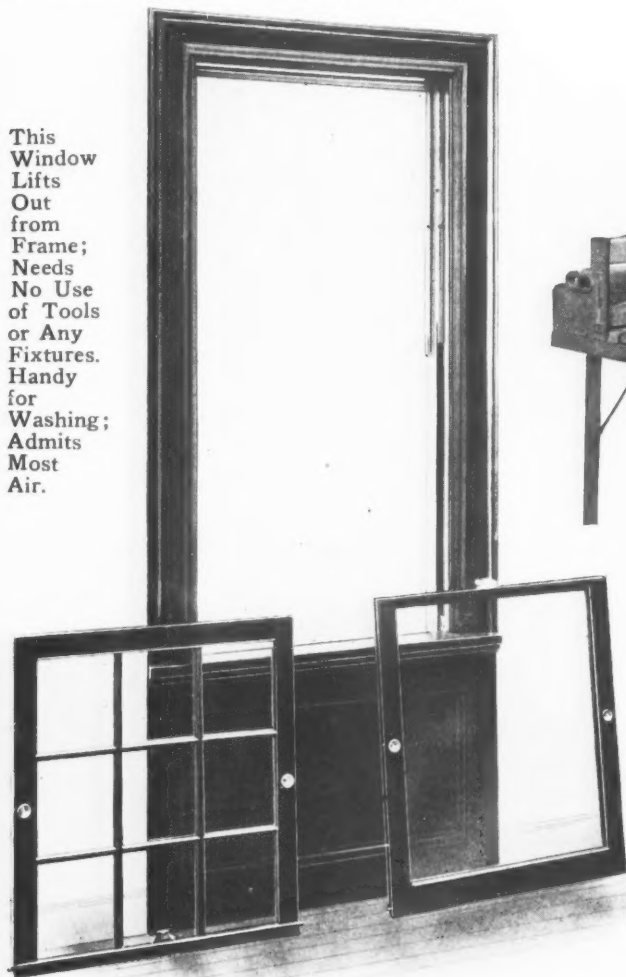
reached without disturbing any other tools. The drawer tracker of the chest shown in the upper illustration is so constructed that it is not possible for the drawers to drop or slide out of place, no matter how heavily loaded.

The shoulder case shown in the lower illustration is so balanced that it can be carried on the shoulder easily, and there is a handle on the end to aid in its properly balancing when so carried.

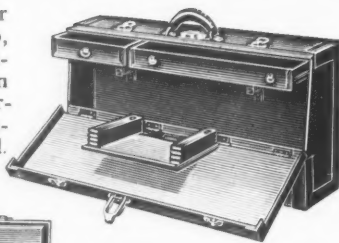
Made of prepared steel, these kits will not warp, split or go to pieces. They are reinforced at points of strain and are reasonably waterproof. ❖

A Removable Window Sash

A REMOVABLE window, which is not constructed of any special type or details, is a regular double hung frame of standard make which can be lifted out bodily from the frame without any use of tools or fixtures.



This Window Lifts Out from Frame; Needs No Use of Tools or Any Fixtures. Handy for Washing; Admits Most Air.



To lift it out all that is required is to pull the bottom sash up, push the knob to one side of the catch, and the sash will release itself. It is then let come down easily, swinging inward, and is turned to one side and lifted out. The upper sash operates the same way. The operation requires but a few seconds, and since the average sash weighs no more than twelve or fourteen pounds it is quite within the control of anyone of average strength.

When removed there is no disfigurement of the frame, nor is there interference with screen, shades or curtains.

The advantages are obvious, since maximum ventilation can be assured on hot days. It is also very handy when washing windows. When glazing, reputtying or replacing sash cord or springs one does not have to spend time dismounting everything connected to a frame. This sash can be installed in older houses where window frames are in place without adding anything new. Architects and builders, as well as the building public, give it their hearty endorsement.



Screen Stretcher That Saves Time and Insures a Neat Job

IT is no longer necessary to stretch screen wire the old way. There is a screen wire stretcher on the market which stretches any width of screen wire evenly and without any waste, the material remaining taut and enabling the carpenter to more easily tack it securely to the frame. It is made up of few parts, and can be used on a bench or table. It is so easily operated that anyone that can drive tacks can accomplish satisfactory results.

As it is both light and strong it can be easily moved or transported. It consists of only three parts, as follows:

This Screen Stretcher Is Made of Few Parts. Can be used on bench or table. Has three parts—arrangement for holding wire cloth; means for clamping it, and stretcher device.



Arrangement for holding a roll of wire cloth, means for clamping the wire after the required length has been attached to the screen frame, and means for stretching the cloth on the frame. Its cost can be saved on a few jobs. It can be placed on or off a bench or table in a moment's time, for it does not have to be fastened down when operating.

The machine is to be had in two sizes, and does not waste, bend or damage the wire in any way. It offers a profitable spare time source of income for the carpenter.



Lowering Building Costs by Using the Proper Hoists

ANY place where there is a rope or a cable to pull is a place where the right kind of hoist can be used to save labor and save money. It yields very big results, considering the small investment required.

The main requirement of a hoist, both as to design and construction, should be simplicity. In the one illustrated the

ELASTICA

THE IDEAL EXTERIOR WALL COVERING

Easy to Apply—Safe and Sure In Results Obtained

**Elastica's Beauty, Durability and Economy
Are Now Backed By National Advertising**

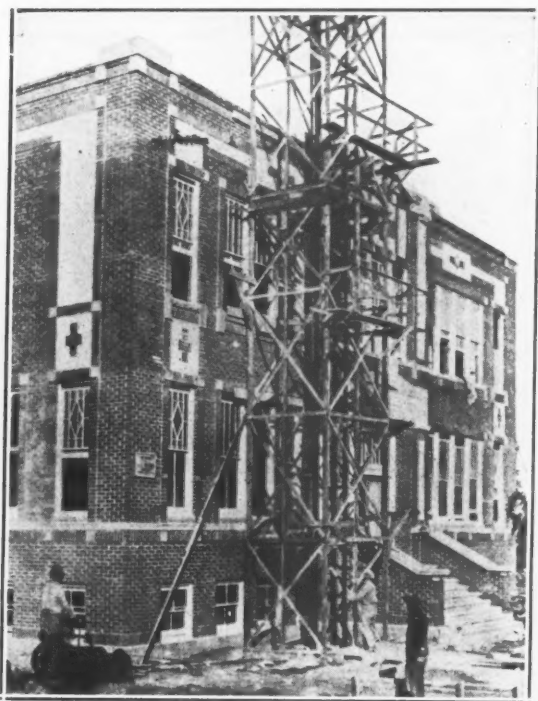
All Elastica jobs are easy jobs for the builder. The material is standard—is mixed at the factory—comes to the builder "Complete in a Sack," with nothing to add at the job but water.

Furthermore, National Advertising is now acquainting prospective home builders everywhere with the proven worth of Elastica. The attractiveness of the material, the fact that it is thoroughly waterproofed and durable and so extremely economical, are creating new live Elastica prospects daily.

Cash in on the popularity of Elastica and the publicity behind it. Use Elastica and satisfy your own interests thoroughly as well as those of your clients.



AMERICAN MATERIALS CO. - NEW YORK
ART STUCCO MATERIALS CO. - DETROIT
NORTH WEST MATERIALS CO. - ST. PAUL
U. S. MATERIALS CO. - - - CHICAGO



The Ordinary 3 to 6 H. P. Engine Will Enable the Hoist to Lift About 300 Pounds Per H. P. at the Rate of 100 Feet Per Minute. This hoist shown at right will save money any place there is a rope or cable to pull.

friction clutches are of the expanding internal ring type and are made only of three parts—the outside clutch case, the internal expanding ring, and the dog or lever for expanding the ring. There are no springs or complicated parts to wear or get out of order. One easily accessible adjusting screw is provided to take up any wear on the clutch. It is operated with any make of engine, motor or other power. The ordinary 3 to 6 horsepower engine will lift about 300 pounds per horsepower at the rate of 100 feet per minute, and other power operates on approximately the same ratio.

A winch head attachment mounted on the end of either drum shaft or counter shaft can also be supplied with these hoists. Some of them are built with a pull-back drum attachment and others with double drums, etc., for special work.



Lightning Rods Safeguard Against Destruction

LIGHTNING stands sixth among major fire causes; on farms alone it is responsible for more destruction than any other hazard. It is trite to say that a building needs lightning rods; everybody realizes this. But to be really effective, a lightning rod must at least meet the exacting requirements of the Government Bureau of Standards and the National Fire Underwriters Laboratories. If it is thought fit to bear their master label after installation the property owner's mind can be at ease. His property, so far as human ingenuity can devise, is secure against destruction by lightning.

Lengthy air terminals do not add to the protection offered by a lightning rod, and in addition they are more subject to the destructive force of wind. The two-legged lightning rod illustrated with its twisted galvanized support meets ordinary

requirements. It can be used with or without glass galls—an equipment for those who wish protection that is practically concealed. The chimney air terminal is most suitable for use on chimneys.

The rods are installed and securely attached to a main conductor, with a ground connection with a pit or perforated copper cylinder filled with charcoal. Miniature conductors connect isolated parts with the main conductor, as necessary, and both inside and outside metal work, where such exists in a structure, have to be taken into consideration when making a building thoroughly lightning proof. Contrary to general belief, a lightning rod does not function merely to direct the severe strokes to the ground, but is continually working during a thunder storm to prevent such severe discharges. Silently and efficiently it conducts the electricity from the atmosphere to the ground.



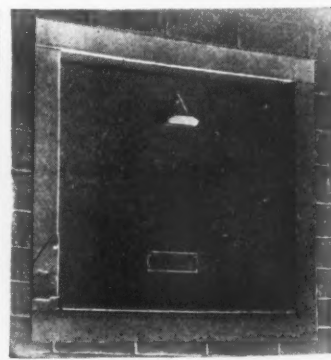
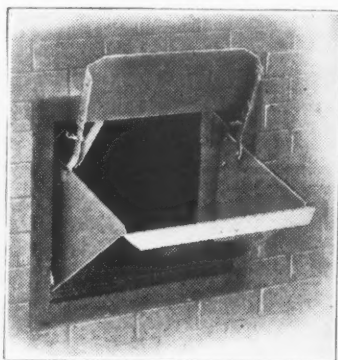
The Metal Coal Chute Displaces

the Old Style Basement Window for Proper Coaling Up

THERE has been a transition from the old-fashioned coal window, with its missing panes, broken sash, and battered frame and wall, to the metal coal chute formerly made of cast iron. So, too, in the last few years there has been a transition from the cast-iron coal chute to one made entirely of steel.

To a progressive manufacturer belongs the credit for raising the standard of coal chute construction from cast iron, which is unreliable on account of its brittleness, to the present-day construction of non-breakable steel.

Not only did he realize the necessity of making a coal chute



Neat, Durable, Efficient, Rust Resistant, This Metal Coal Chute Is Vastly Superior to the Old Fashioned Substitute, the Swinging Basement Window. Burglar-proof, too.

throughout of steel, but he went a step beyond. He undertook to develop a coal chute that would not only be unbreakable but rust-resistant as well. So attractive is it in appearance that it is worthy of a place in the front of a home.

It is almost automatic in operation. By means of the control



KELLASTONE

IMPERISHABLE STUCCO

Super-Plaster

*imparts beauty and
distinction to plastered
interiors*

KELLASTONE Super-Plaster is a distinctive type of caustic magnesia cement — the most important advancement in the character and quality of plastering materials achieved in generations.

All that economy demands, that comfort, refinement and permanence necessitates, and that art desires, may be expressed in Kellastone Super-Plaster with enduring satisfaction, unusual charm and stability.

Kellastone Super Plaster is so far superior to ordinary lime and gypsum mixtures that there's no comparison. From every viewpoint Kellastone commands preference, irrespective of initial cost.

Kellastone Super-Plaster is prepared ready for use with addition of a magnesia chloride solution in liquid form. No sand, hair or other ingredients necessary. It is applied like any ordinary plaster, works freely and smoothly under the trowel. Ask your local dealer or write and ask us for catalog, prices, complete and full information.

NATIONAL KELLASTONE COMPANY
CHICAGO — NEW YORK



chain, carried to any convenient place in the home, as, for instance, the kitchen, the housekeeper can release the lock without entering the coal bin. If unlocked, an outward pull on the door by the coal man opens the chute ready for business, wings on the door forming a convenient hopper for receiving

operation repeated. While this block is being made the off-bearer carries away the block just completed and places an empty pallet on the table ready to receive the next block.

It works fast and the mold box can be adjusted to different size block and tile.

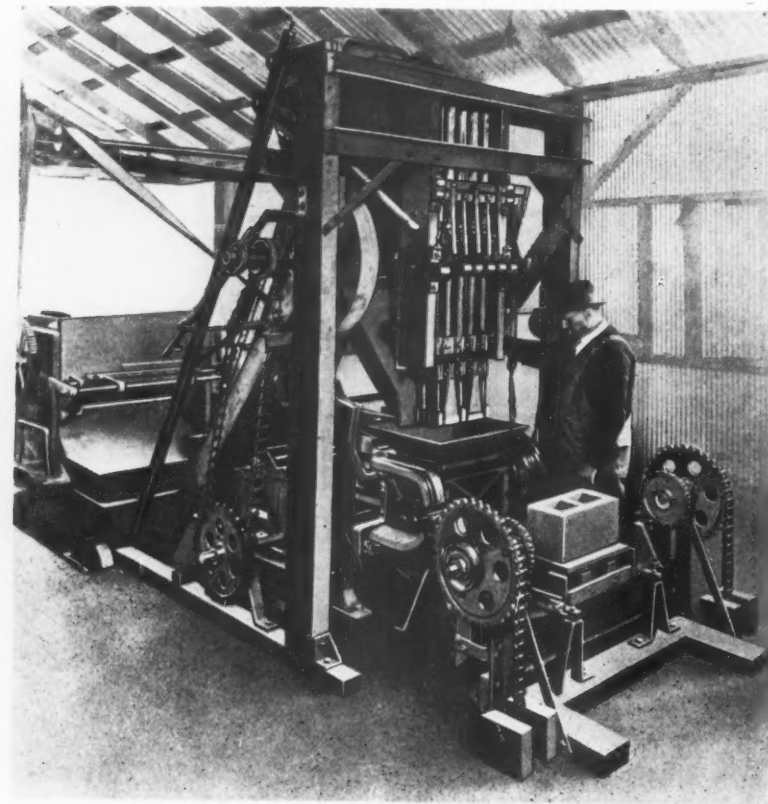


Unique Brick and Tile Mortar

IN one of her titanic processes Mother Nature bestowed a little extra attention upon the rock strata near Mankato, Minn., and by that little consideration placed the architect, the bricklayer and the builder under obligations to her for all time. A Minnesota company has applied many years of earnest effort to perfecting this for building use, and the result is a cement high in lime, possessing unusual and always uniform qualities which make it like no other cementing and binding material used for brick and tile mortar.

It has proven a great time and money saver. The mixing formula is extremely simple: one part being used to four parts of clean, sharp sand. It requires no lime and is ready for use as soon as mixed; is very plastic, and encourages the laying of the maximum amount of brick; it takes a quick set in the wall. It continues to harden indefinitely, making a bond harder than the brick it joins, and its creamy white joint dresses up the entire wall with a uniform, pleasing tone. Mortar color can be added if desired.

Should any of it be left over at the close of the working day there is no wastage, since the mere addition of water next



This Machine Works Fast, and Has a Mold Box That Can Be Adjusted to Different Size Concrete Block and Tile. It assures a uniform quality and a profitable product.

the coal. When the coal has been delivered a push inward on the door automatically locks the chute.



Makes Good Concrete Block and Makes It Fast

MANY manufacturers have devoted themselves to the solution of the problem presented by the increasing demand for concrete block. For the past two years one of them has been perfecting a machine which he has designed to make good block and make it fast, be automatic and yet avoid the complications which would lessen its efficiency. The result of his efforts is shown in the illustration herewith.

The principle of the machine is a carefully balanced mold box which rolls on a track. In the loading and tamping position the mold box is back under the tamper and the scraping hopper is forward over the box. The operator handles the tamper in the regular way, throwing in all the tamp feet at once, and at the same time feeds the concrete into the box, using the standard conveyor and feeder for this purpose.

As soon as the tamping is completed the scraping hopper is pulled back by power, carrying the surplus concrete back on to a plate ready to be used in the next block. The mold box is then rolled over, the operator presses a foot lever which throws in a clutch shown on the end of the tamper shaft, and this by means of cams, forces the block out of the mold box downward onto a pallet placed on a counter-balanced table. As soon as the block is stripped the mold box is rolled back, the scraping hopper brought forward for loading, and the



This Kind of Stairway Moves Up Easily Out of the Way When Not in Use, and Not Only Saves Space but Increases Usable Room.

morning makes it ready for use. Aside from its manifestly excellent working and binding qualities contractors and builders favor it, since it enables them to make lower masonry bids.

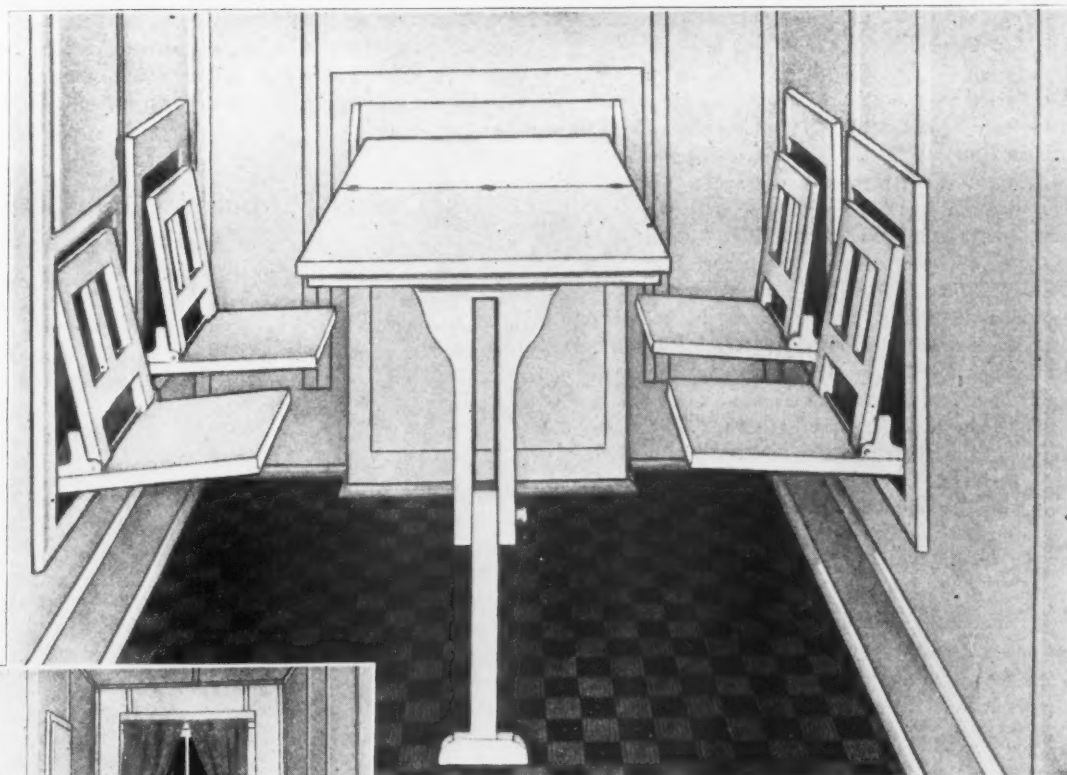


Solving Stairway Space Problems by a Movable Stairway

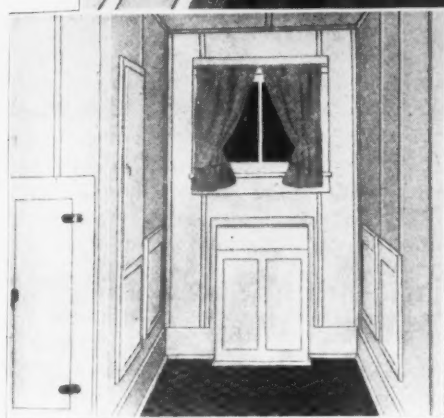
ONE day a certain man had occasion to go into his attic. There was no stairway and he had to get a ladder and crawl through a hole in the ceiling. When he got back down again, after gingerly making his way down the precarious temporary arrangement, he began to figure out the why and wherefore of a stairway that would be invisible, out of the way, but instantly accessible when wanted.

He sawed the attic entrance larger, secured some lumber and some necessary metal. For a time he thought in terms

included
at one
and
struct
as it



The PULMANOOK open for breakfast



The PULMANOOK closed
Table and two chairs can be used
also in a corner instead of an alcove.

Standard Kitchen Units —bring you new profits

In houses which you build for others, you can act as dealer for Kitchen Maid standard units and sell them at a profit. In houses which you build to rent or sell yourself, you can increase the renting and selling value by this modern equipment which appeals to women at sight. It saves pantry space—makes it possible to build a smaller kitchen which is more attractive.

Folding Ironing Board, Broom Closet, Dish Closet, Pulmanook of four chairs and a table with ironing board above one seat if desired—these are some of the units described in the catalog. Get the facts in a fully illustrated book, including mechanical drawings showing dimensions. Get the book. Get prices. Send coupon today.

WASMUTH-ENDICOTT COMPANY, *Andrews, Ind.*

308 Snowden Street

Makers of the Famous
KITCHEN MAID Kitchen Cabinet

KITCHEN MAID
STANDARD UNIT
SYSTEMS

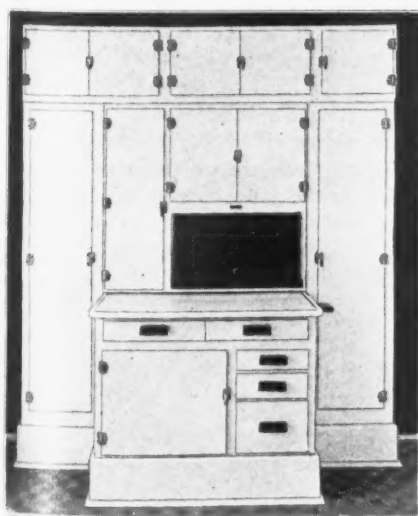
WASMUTH-ENDICOTT CO.,
308 Snowden Street, Andrews, Ind.

Please send me catalog of Kitchen Maid Standard Unit System for kitchens.

Name.....

Street and number.....

City..... State.....



COMBINATION 1-X

includes a Kitchen Maid cabinet with broom closet at one end, dish closet at other, and closets for dishes and staple foods across the top. Substantial construction, refrigerator hardware make it as durable as it is beautiful.

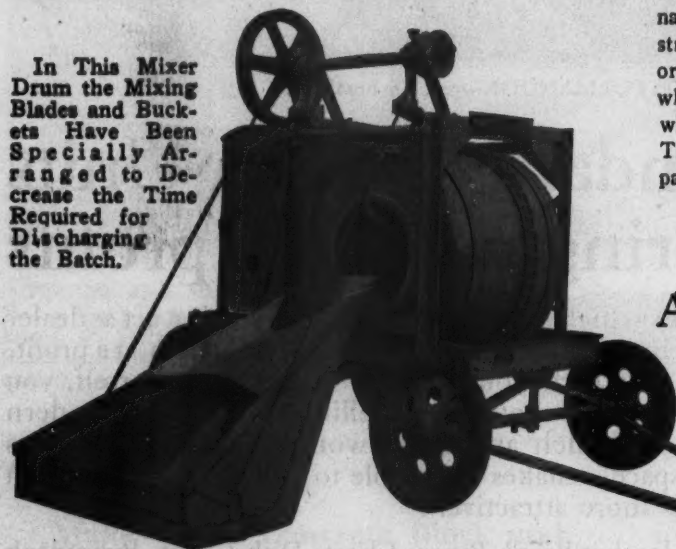
of stair horses, spring barrels, equalizing bars and traveling pulleys. Then, one day, he persuaded his wife to leave home—for a visit.

When she came back he led her proudly where the small brass chain dangled from an attractive panel set in the ceiling. Her lesser half reached up casually—and presto! Down came a full-fledged stairway. "Walk right up," he said; "discover your attic!" She did, and was delighted to find two new rooms in her home, for, like all true householders, he did the job up right—two extra sleeping rooms were before her, with fine large windows.

The neighbors came in to see the curious disappearing stairs. There came more orders. Now the foresighted householder is a manufacturer of disappearing stairways, and not only homes, but office buildings, garages and many other buildings save space and gain space by the stairways he builds. One of them is illustrated here; a real man-size stairway, strong and durable, and which, like a good servant, knows its place and keeps it. ❖

A New One-Bag and Half-Bag Mixer

SOME new types of mixers of the low-charging type, equipped with either a hinged platform or charging skip, are being placed on the market by a manufacturer of such equipment. Speed and low mixing cost are two characteristics he has successfully built into them.



In This Mixer Drum the Mixing Blades and Buckets Have Been Specially Arranged to Decrease the Time Required for Discharging the Batch.

In the drum the mixing blades and buckets have been specially arranged to decrease the time required for discharging the batch, no matter what mixing proportions are used. The opposite side discharge control is of an entirely new design to make the operation of the chute easier. The power charging skip has been constructed so as to reduce the time of charging the drum.

By mounting the countershaft up out of the dirt line and using a vertical engine, the new models have been made very compact and sturdy. The shorter wheel-base makes them more readily portable, especially in close quarters. Truck construction is distinctive in design, the front axle being built up of cold-rolled shafting and trussed channels to give it greater rigidity. An adjustable malleable jack placed in the charging end of the axle gives the mixer 4-points suspension while mixing concrete. Rubber tired disc wheels or built up steel wheels are optional equipment.

The super-structure is built of heavy steel angles which are gusseted in both directions. The main counter-shaft is mounted on self-aligning bearings high up on the machine where it is readily accessible at all times. The asbestos disc clutch has a great gripping area and is smooth in operation. Self-oiling bushings are provided in the drum

rollers which are of malleable iron construction.

The half-bag mixer is equipped with an 6 h.p. 2-cylinder vertical, hopper-cooled engine having a high-tension magneto, an automobile type carbureter and a throttling governor. On the one-bag mixer, a 4 h.p. vertical gasoline engine is used.



Repairs Broken Concrete Floors Quickly

A NEW compound for repairing concrete floors that will produce a patch of flint-like hardness in 48 hours has recently been developed.

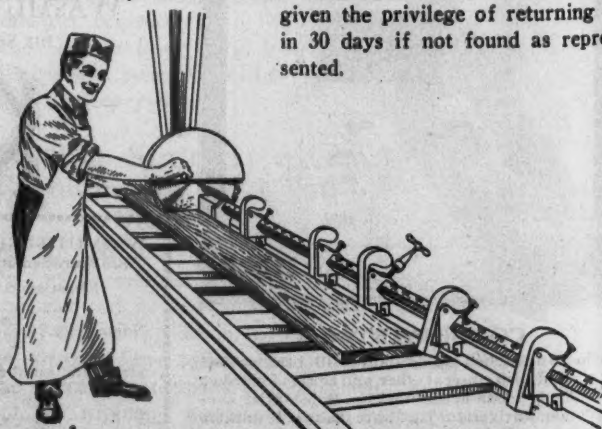
One serious problem that the maintenance divisions of industrial plants constantly face, and for which no solution has until now been found, is the efficient maintenance of concrete floors and driveways. The increasing volume of internal trucking done for the most part with steel wheeled trucks and trailers has resulted in more rapid dusting, crumbling and disintegration of the floors and roadways over which the traffic moves. Operations are finally impeded by the poor condition of the route, and the necessary repairs are undertaken later, as a rule, than they should.

Now, however, the installation of repair patches can be made by any handy man, not necessarily skilled in the handling of concrete, by following directions furnished with the material. It speeds the hydration of the cement. In 24 hours the strength of the patch is 71 per cent greater than that of ordinary cement mixtures; the permanent tensile and compressive strength of the patch is considerably greater than that of ordinary cement. In addition it furnishes a binding property which not only bonds the coarser aggregates of the patch, but which bonds the patch firmly to the edges of the old surface. The resulting flint-like patch becomes practically an inherent part of the old floor. ❖

Automatic Swing Saw Gauge Checks Waste

A MANUFACTURER is placing on the market an automatic swing saw gauge which ought to save many hundreds of dollars a year on the swing saw in any builder's plant. It is pointed out that a waste of 1/2-inch per cut on stock 12 inches wide at \$100.00 per M feet amounts to \$2.00 per day, or \$600.00 per year. The stock loss in the usual case would be apt to be greater—since the waste would be nearer the 1-inch cut. There is also a big saving

in time through the operator's ability to select any stop wanted without leaving his position in front of the saw, as the stops are accurately balanced and push back easily. The bar is graduated both ways for use on either side of saw, and both stops and brackets, being of steel, are well-nigh unbreakable. A noteworthy feature is that the gauge is sold with the buyer given the privilege of returning it in 30 days if not found as represented.



Automatic Swing Saw Gauge in Use.



Jobs Like This Mean More Profits!

REMODELLING store fronts is a most profitable proposition for the contractor who installs Brasco Copper Store Fronts. There are two reasons for this:

First, Brasco materials are easy to install, requiring the least possible time. Secondly, and most important, retailers in your city want their store front jobs handled by the contractor who has a reputation for placing the highest quality store fronts at FAIR PRICES, made possible by Brasco.

Why not become known locally as the Brasco man and cash in on this ever increasing, money making business. Our service department will help you. By mailing the coupon today you can get our new book of designs and complete data on how to become a Brasco contractor.

BRASCO MANUFACTURING CO.
5029 South Wabash Ave. CHICAGO

Brasco

COPPER STORE FRONTS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

Brasco Manufacturing Co.
5029 S. Wabash Ave., Chicago, Ill.

Gentlemen:

Brasco Profits Interest Me!

Send me your catalog and tell me how I can make more money installing Brasco Copper Store Fronts.

Name

Street and No

City

State

(AB823)

Efficient, Simple Oil Burner Yields Ample, Cheap Heat From 95% Air and 5% Oil

AIR is the only thing on earth absolutely free. Oil—kerosene or coal oil—is the cheapest fuel obtainable, and can be procured anywhere. Utilizing these two a manufacturer has produced an oil burner which furnishes, right in one's regular furnace or boiler, a steady gas fire. It means all the cleanliness and the convenience and cheapness of dependable oil fuel, and does away with dirty coal and wood, and their even dirtier ashes.

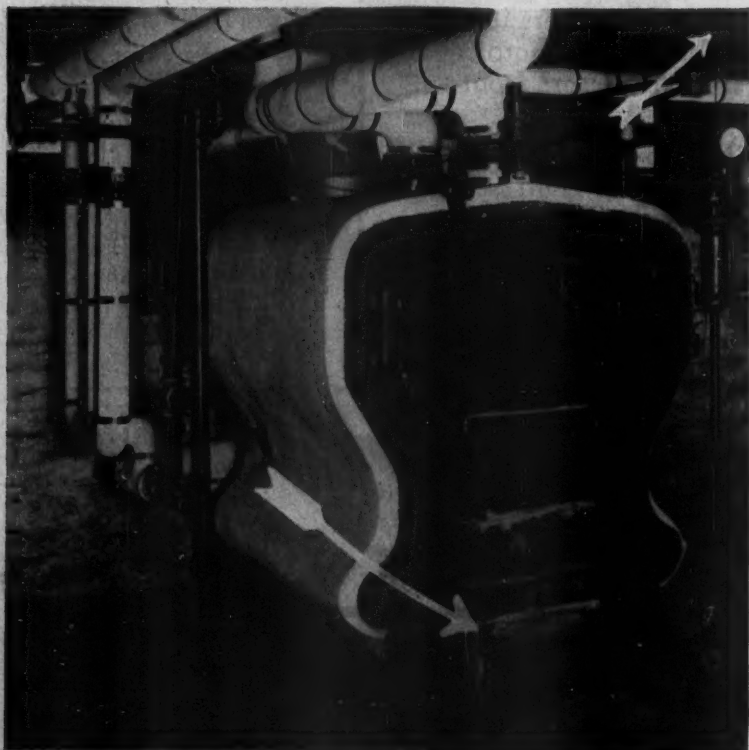
No Expensive Installation

The illustration shows the simple construction of this new oil-gas burner. There are only three parts—burner, tank and feed line. These three parts, connected by simply turning two nuts, make a complete independent gas plant. The oil-gas burner is simply placed in the grate door as shown in the illustration, easily and quickly, without damaging the boiler or furnace face. No cutting, hole boring or bolt fastening is required. It is entirely self-contained, and may be lifted out or in without turning a nut, even while it is burning. In most cases the housewife herself could do the necessary installing, were it demanded of her. Solderless couplings make permanent connections that are absolutely oil-tight.

Valves Regulate Flow of Oil from Tank to Burner

Valves, connected at the factory, regulate the flow of oil from tank to burner, and require no attention to function correctly and automatically. The oil is fed to the burner from the tank by gravity flow, the tank being set higher in order to insure this, although an air pressure tank may be used, if preferred. The

The Oil Burning Unit Shown at the Right Is Inserted in Boiler as Indicated by Lower White Arrow. It uses kerosene, and heats a Sisters' Community House, with twenty-eight occupants, shown on the extreme right.



tubing feed-line, running from the tank to the burner, is about the size of an electric wire, and can be easily bent to lie in the position desired. The supply tank is attractively enameled and can be set wherever desired; on the wall, behind the furnace, in a convenient corner, on the back porch or under it, or on the basement landing—wherever it can be easily re-filled.

On this page is pictured an installation of the oil-gas burner in the basement of a community home housing twenty-eight persons. It will be observed that the one burner suffices to turn this one-time coal burning boiler into an oil burning boiler. It is indicated by the lower white arrow, and is interesting in that it shows just how the usual installation of an oil-gas burner appears in connection with an ordinary boiler or furnace.

The upper white arrow points to guiding chains proceeding from a thermostat (blocked out in the photograph). The thermostatic arrangement means that through the use of a pilot light the heating-unit is re-ignited whenever the house temperature becomes lowered beyond the desired point. The thermostat is electrically operated, using batteries or one of



the small step-down transformers now on the market, and which are feasible where the house is already wired for electric current.

The oil-gas burner mechanism cannot get out of order—it is too simple. Air and the oil-gas are mixed together outside the burner in the open firebox. Nothing at all takes

place inside the burner itself, and there can therefore be no carbonization or clogging up. Its construction is exceedingly high grade; it is of solid iron, and the substantial copper tubing and galvanized bottom tank help make the oil-gas burner continue to be a good investment.

Some of the first types of these oil-gas burners, installed 11 years ago, are still giving satisfactory service. The cost for the kerosene fuel is lower than other fuels, and bought in barrel lots or tank delivery makes a still greater saving. And the simplicity of the mechanism is just as attractive as the low cost, easy operation, and freedom from ash drudgery.



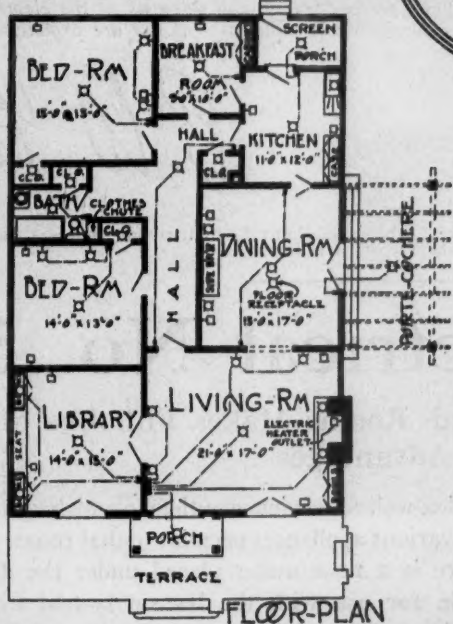
Utter Quiet Amid City's Roar

VISITORS to New York, who long for even a few moments' cessation of the city's racket may, if they are properly introduced, be taken into four rooms where practically no outside sound can reach them. These rooms, however, are not maintained to give relief to over-strained nerves. They are in daily use by engineers of the Western Electric Company in the Bell Telephone Laboratories at West Street for carrying on delicate tests of telephone apparatus.

WHITE MAGIC

The Electrical Section of the
AMERICAN BUILDER MAGAZINE, CHICAGO

August, 1923



A SOUTHERN COLONIAL BUNGALOW. Efficiency reigns in this pretty little home of seven rooms. Notice how effectively the lighting is laid out, and notice the generous supply of electrical convenience outlets which give the fortunate owners the comforting assurance that all

electrical appliances now possessed or to be acquired in the future will be conveniently usable. Planned by the architectural department of the Southern Pine Association, this gem of a design has been reproduced many times in actual construction all over the United States.

ELECTRIFY ALL BUILDINGS

A Department of Up-to-date Information
for all who Plan and Build

WE, of the electrical industry, are very gratified to have the privilege through this department of talking to the men who plan and build the homes of America. We have a message of great importance to all. Follow it carefully, and you will make your homes and other buildings more modern, more attractive, more salable and more livable. Electrify all buildings. Plan from the beginning on adequate wiring, adequate outlets and a proper investment in lighting equipment. Look ahead and see the ever-growing use future occupants will want to make of electrical appliances and labor-saving electrical conveniences of all kinds. You will find this a policy and a line of approach that will instantly appeal to your clients and prospective clients.

Make full use of the Electrical Section of the AMERICAN BUILDER, feeling free to call upon us of the electrical industry for information or suggestions. We are organized to help.

E. W. Lloyd

General Chairman, Joint Committee for Business Development of the Electrical Industry.

Our Home Electrical No. 5

English Cottage Design of Six Well-planned Rooms Makes Full Use of All the Modern Electrical Advantages

ELECTRICAL Home No. 5 is a most attractive dwelling from the standpoint of architecture and comfort, and from the complete use of electrical conveniences.

The first thing that pleases the visitor's eye is the illuminated house number placed over the door. It stands out like a beacon on a dark night and enables the passerby to locate the place immediately. There is also placed over the door an electric illumination unit designed for such purpose. If desired it may be placed on either side of the door. Many most decorative and attractive lamps now on the market are especially adapted to such usage. Both the house number and porch lights are controlled from switches placed just inside the door in the living room at the entrance to the vestibule. Close to this switch is a third, which operates the ceiling luminaire in the vestibule.

The dining room is equipped with three

duplex wall convenience outlets to which will be attached the various appliances peculiar to that room. In addition there is a floor outlet placed under the dining room table for use with the buzzer system to signal the kitchen. There is also a heavy-duty outlet placed beneath the dining-room table for use with several appliances at the same time.

Upon entering the dining room either from the hall or from the kitchen it is possible to illuminate the ceiling unit by switches placed at both entrances. The convenience outlets in the dining room as well as in the other parts of the house have been placed where it is

thought that they are more likely to be used. The electrical man laying out a wiring diagram such as this must assume that some particular piece of furniture will be located at a given spot in the room and place his outlet accordingly.

The living room is especially well equipped with convenience outlets. A



All Summer



Vacation Comfort All the Time When Electricity Is Rightly Used.



The Mantel Lights in the Living Room Lend an Attractive Decorative Effect. Note the electric heater in the fireplace.

total of five duplex style and four single ones are indicated on the plan. These outlets give the owner great leeway in the handling of appliances and portable lamps. They enable him to have a bridge lamp located near his favorite easy chair, and he is able to move the latter without going beyond the reach of this small but most essential complement of the modern home.

A three-way switch operated from the entrance to the living room from the vestibule and from the dining room enables the person entering the room to turn on the lights in the central ceiling unit or extinguish them from both places. The side-wall brackets are controlled in pairs from two switches located near the entrance to the dining room. The convenience outlets located on the mantel permit the use of the attractive portable lamps designed for such purpose, which are now to be had at reasonable prices, and which go so far to improving the decorative effect of the room.

Lights in the lower hall are controlled by a three-way switch which permits of it being lighted before ascending the stairs and being extinguished from above. Close at hand is another three-way switch which controls the light in the upper hall, enabling the householder to turn on illumination upstairs before ascending and putting it out after he has gone up. Too much

emphasis cannot be placed on the importance of switches of this character. It is far better to come down into a lighted hall at night than it is to descend into total darkness, and a switch of this character enables the householder to see where he is going.

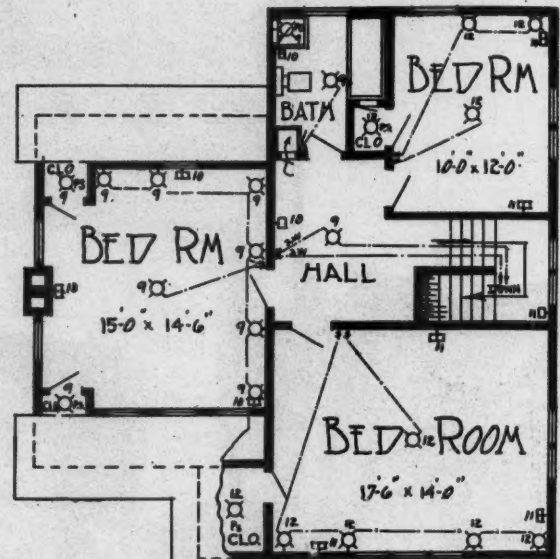
The light from the hall closet is controlled by a switch handily placed near the door.

The central ceiling unit in the kitchen is operated both from the entrance into that room from the hall and from the dining room by means of a three-way switch. In the kitchen there is a duplex outlet in the outside wall for use with the various appliances which go so far toward eliminating much of the drudgery incurred in the preparation of meals and cleaning up after them. This outlet should be placed about 4 feet high in order that it may be just above the top of the kitchen table, which will undoubtedly be placed at that spot. An outlet has been provided in the rear wall for giving current to the ventilating fan which has been indicated to be installed at that spot. No modern kitchen can be called up-to-the-minute unless it has one of these appliances placed in it. There is another outlet in the rear wall which can be used with a washing machine or a dish washer. It is controlled by a switch placed high enough to make it unnecessary for

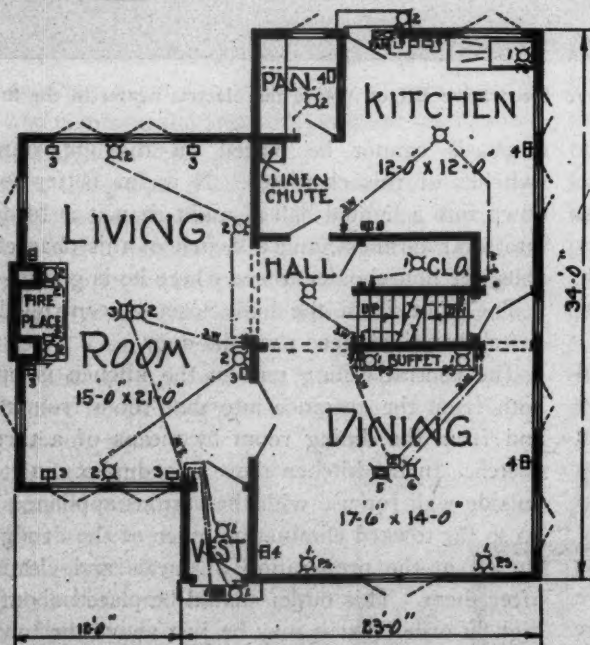
Our Home Electrical

The Fifth

- SYMBOLS**
- CEILING OUTLET
 - ⌈⌋ BRACKET OUTLET
 - ⌈⌋ CONVENIENCE OUTLET
 - ⌈⌋ FLOOR RECEPTACLE
 - SPECIAL OUTLET
 - S- SWITCH



SECOND FLOOR PLAN



FIRST FLOOR PLAN



FLOOR PLAN OF OUR HOME ELECTRICAL NO. 5. Observe the arrangement of the six fine rooms that comprise the beautiful English cottage design home pictured on the page opposite. Could anything be more

delightful than that big living-room with windows opening in three directions? The dining-room, kitchen and the central hall are also most happy in their planning, and the upstairs space is used to just as good advantage.

the operator of the appliance to stoop down to connect or disconnect it.

The pantry light is controlled by a switch placed near the door and at one side has been indicated a convenience outlet to be used in connection with an electric refrigerator. Another indispensable complement to a modern home!

On the second floor also we find excellent accommodation in the matter of convenience outlets and conveniently located switches. In the main bedroom in front you find three duplex convenience outlets providing the use of six appliances or lamps at the same time. These will be appreciated by the lady of the house, especially, as being the best means of enabling her to use the many electrical appliances adaptable for use in the bedroom. In the rear wall, for instance, there is a duplex outlet which will provide the reading lamp for the head of the bed or between twin beds, and at the same time the heating pad or other appliances that may be used. The switch controls of this room operate the central ceiling unit and four side wall brackets, one switch being used for each type.

In the second bedroom there are six side-wall brackets operated from a single switch, and a second switch controls the center ceiling unit. Three duplex convenience outlets provide ample accommodation for the use of electrical appliances. In the two closets in this room as well as in the other bedrooms the light is con-

trolled by a pull chain, enabling the householder to leave the door open for cleaning, airing and other purposes, if so desired, without the necessity of having the light burning as would so be the case where an automatic switch, which turns on the light when the door is open, to be used.

The ceiling unit in the bathroom is operated by a switch placed at the entrance, and beside the basin has been placed a duplex convenience outlet for use with appliances especially adapted in the bathroom.

The third bedroom in this house is equipped with two duplex convenience outlets, and the side-wall brackets and ceiling lighting unit are controlled by special switches.

The Lighting Installation

Here the prospective house owner, the builder and the architect are given a definite lighting arrangement harmonious with an arbitrary color scheme, which has been selected with a view to harmonizing lighting fixtures with the interior decoration; of course, this can be changed to suit the individual taste.

Starting with the vestibule, it can be seen that provision has been made there for a ceiling outlet. Lighting fixture and glass manufacturers have designed attrac-



IF we were planning this home or any other home, we would specify at least two convenience outlets in every room, and in some rooms more than that—outlets where floor lamps and table lamps, vacuum sweepers, electric cookers, and electric heaters and the whole range of wanted electrical appliances can be attached handily. We would

specify these, and see that they are built in as part of the building contract; not left to be added later at greater expense and much greater muss and inconvenience. No home is modern today that does not boast an over-supply of electric wiring and convenient outlets.



In the Bedroom the Convenience of Electricity Is Appreciated Most. The heating pad, the milk warmer, the fan, the curling iron, the vibrator, the violet ray, are all bedroom conveniences that distinguish the electrical home.

tive luminaires reminiscent of the old English type of lanterns for such purpose. Some most attractive fixtures for this particular use are now available, and prospective purchasers of lighting equipment are advised to spend considerable time in looking over designs to suit their individual tastes and pocketbooks.

For the vestibule of this house with its walls of oak brown, our attention is immediately focused on the single outlet in the ceiling for which we have supplied the ever popular golden bronze lantern equipped with a cylinder of amber antique glassware.

In the living room it can be seen that great care was given to make the lighting arrangement comfortable and restful in tone, and free from glare. Arrangements have been made for a central ceiling outlet from which can be extended a rich antique gold luminaire of the five-candle empire type upon which may be advantageously used glass candle shades in warm brown tones, in delightful accord with the brown walls and colorful combinations of the oriental rugs. Four brackets are placed at intervals about the walls—one on either of the rectangular end walls and two on the longer sides, with additional brackets at either end of the fireplace. The units can be selected to match perfectly the central luminaire with both metal and glass. Numerous baseboard convenience outlets permit the use of floor and table lamps which lend charm, beauty and comfort, and permit the light to be localized whenever it is undesirable to have the room completely illuminated.

Directly from the living room we enter the dining room. It is rarely that sufficient thought and care are given to the planning of proper illumination for this most important room. It will be observed that a central ceiling outlet is found in most rooms of this

character. There is a tendency, however, to use this outlet for units which are entirely unsuited for the purpose. Let us assume that the walls are of the new Chinese blue combination to be found in modern dining rooms of distinctive design and character. There has been selected for this room a silver and black pendant with which can be used one of the newest ideas in lighting—a 16-inch or 18-inch glass dome, partially enclosed and decorated with sand color background and blue design, having an opening in the bottom which permits the direct illumination of the table, silver and linen, yet so shading the eyes of the diners that both comfort and artistic enjoyment of the surroundings will not be marred by glare. This unit represents the last word in scientific dining room illumination, and there are several sizes of these

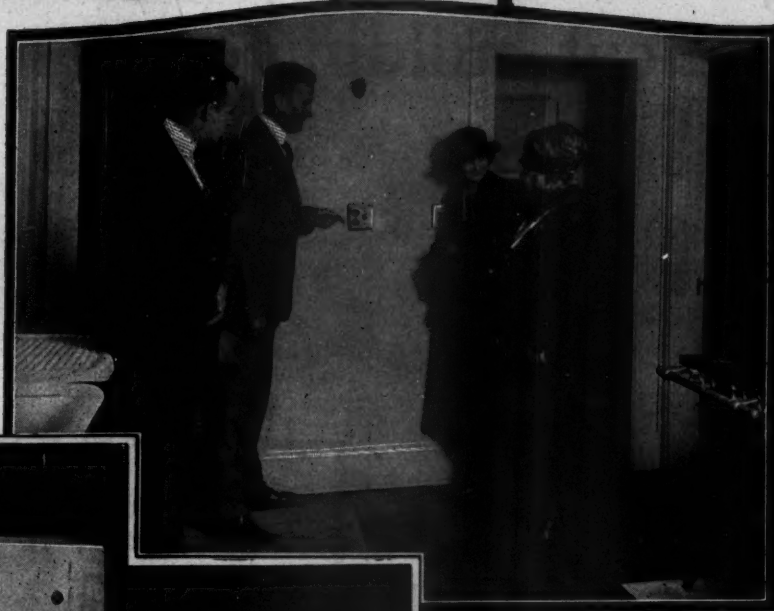
shades on the market today. The wall brackets placed in the room should be of a silver tone harmonious in design to the central units.

In passing from the dining room to the kitchen we find that there is a small hallway which connects the downstairs room with the stairway leading to the second floor. This hall should be done in the same coloring as that of the living room. A single chain pendant



The Tumbler Switch Is a Great Convenience.

When they stop and ask



"How about an outlet for the electric iron?"—you show them this twin convenience outlet (for using iron and another device at the same time) at the right height and with tell-tale lamp that shines when the current is on.



G-E Tumbler Switch and Bullseye.
G-E Twin-Convenience Outlet and Bullseye.
Bullseye light shines when the current is on.

All dependable and experienced contractors using General Electric Reliable Wiring Devices are prepared to cooperate with you in making your houses "complete electrical homes."

National distribution of the booklet "The Home of a Hundred Comforts" has focused the attention of hundreds of thousands of home builders and buyers on complete wiring and quality wiring devices.

Send for your copy of this booklet today.
Address Section AB-6

Builders cash in on the universal interest in Electricity—the servant

All housekeepers are today keenly interested in the many things Electricity will do for them.

They plan ahead for adding one electrical convenience after another.

Every woman wants her home to be electrical—either now or sometime later on.

Builders who recognize this and are installing complete convenience wiring with G-E Reliable Wiring Devices are cutting down selling costs, and making quicker sales and better profits.

They find that their best returns come from the small additional investment needed to complete the wiring for the use of all electrical comforts and conveniences.

G-E Reliable Wiring Devices, nationally known as the standard of excellence, are the home buyer's assurance of dependable electrical service.

Merchandise Department
General Electric Company
Bridgeport, Connecticut



Wiring Devices

41-219

A GENERAL ELECTRIC PRODUCT

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

The wringerless Laun-Dry-Ette will help you cut building costs



A suggestion of extraordinary interest to house builders

Mr. Contractor and Builder here is a practical idea that will give you an edge on competition and win appreciative customers.

Facts you know are A first-hand study of the desires of women home-makers, based on written statements of several thousand women in all parts of the U. S., indicates an overwhelming demand for the elimination of all stair climbing. The average woman doing her own housework wants a single-floor home. She is thinking of how much easier it is to concentrate her work on one floor where she can answer the phone, tend the door, do the cooking, and keep her eye on the children without eternally running up and down stairs.

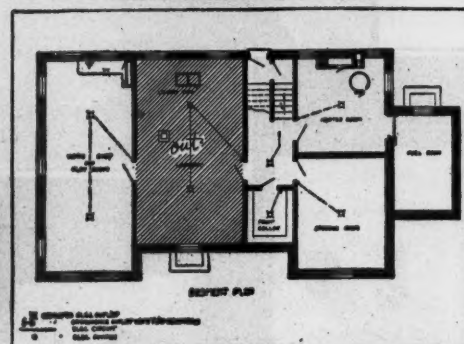
The Laun-Dry-Ette makes it possible to carry out such a plan—do everything enumerated above and also do the washing and ironing in the kitchen.

And we are telling nearly a million women—many of them right in your community—about it in the August issue of Good Housekeeping Magazine.

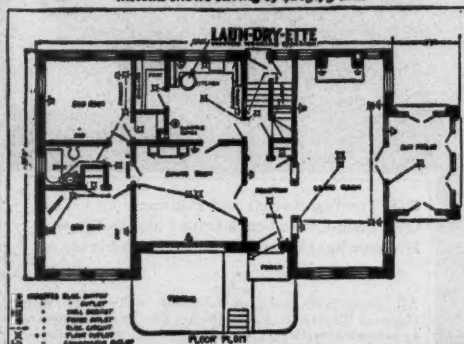
With the Laun-Dry-Ette electric washing machine—the original wringerless washing machine—all need for extra tubs is dispensed with. Rinsing and bluing as well as the washing are done by the Laun-Dry-Ette. There is no need for stationary or portable tubs hence no need for a basement laundry. Other advantages that appeal to women are: the hands need never be put into water during a wash; buttons are never pulled off or smashed; ironing is made easier. Very little space is required for the Laun-Dry-Ette. Women will be asking you about this idea; we want you to know about it.



A typical example of single floor home.



Omitting excavation for work room shown on left of basement plan and converting the grayed space marked "laundry" into workshop instead shows saving of \$205.75 and



with a Laun-Dry-Ette in the kitchen, as indicated, a basement laundry is unnecessary.



The patented wringerless Laun-Dry-Ette which does away with need for extra tubs and basement laundry.

© 1923, —The L. M. Co.
Cleveland, O.

The
Laundryette
Mfg. Co.
1175 E. 152 St.
Cleveland, O.

Without obligation on
my part please give me
further information about
the Laun-Dry-Ette.

Name _____

Street _____

City _____

State _____

A Practical Example of How It Saves Money

Study the house plans shown on the right. Note how easily it is modified by eliminating the laundry space and substituting work room thus affording every needed facility and making unnecessary several items of cost as follows:

Excavation	\$ 20.00
403 sq. ft. concrete floor at 25c ft.	100.75
7 basement windows with frames complete	35.00
1 pair laundry tubs installed	40.00
1 Door and frame complete	10.00
Total Saving	\$205.75

You probably have many prospects to whom this idea will appeal. To get full information and name of dealer where you can see the Laun-Dry-Ette and verify our statements in detail simply fill in the coupon and mail to us.

The Laundryette Mfg. Co.
1175 E. 152nd St. Cleveland, O.

FILL OUT AND MAIL THIS COUPON

fixture, old gold in finish equipped with a glass enclosing globe preferably and of the same design as the glassware used in the living room, is the ideal type of illumination unit for this hallway.

The stair closet opening from the hallway should be equipped with an open-type white glass shade. The plan in this case calls for a pull-chain unit.

It is most important that adequate lighting be installed in the kitchen, which is really the workshop of the home and is too often neglected in this respect. Numerous experiments with various types of fixtures and glassware have developed the fact that the most effective lighting can be obtained from the central ceiling outlet by the use of either a close ceiling or chain-type white enameled fixture having a 4-inch holder. If the ceiling is low, a close ceiling type is desirable. If the ceiling is very high, however, a chain or stem fixture of the required length can be used with equal efficiency. A 100 or 150-watt type C Mazda should be used, and careful attention must be given that the light is properly and evenly diffused. Care should be taken in the selection of the globe for this purpose. It should be of white diffusing glass with a high degree of efficiency—not too shallow or else the lateral distribution of light will be lacking. If it is too deep the distribution will be entirely lateral with a minimum amount of light component downward upon the working plane. Equally essential is a white enameled bracket with open type white glass shade which has been placed over the sink. This will especially be appreciated by the person whose duty requires her to do much work in that locality. If the central ceiling fixture alone is used the person standing in front of the sink has a shadow on the working plane which does much to hinder the work.

The pantry with its white walls may be equipped with a white pendant-type fixture and open reflector of white glass.

On the rear porch should be located a simple black ceiling-type holder with a 6-inch crystal roughed inside ball globe, which will be found to furnish adequate lighting.

In passing to the upper story, a bracket on the stair landing may be observed. This should be of the same finish—in so far as the metal parts are concerned—as the downstairs hall pendant. The glassware also should be of the same design as the globe in the lower hallway.

In the upper hall, however, which we assume to be decorated—in so far as the walls are concerned—in the same manner as the lower hall, provision should be made for a central ceiling outlet of old gold finish equipped with an ornamental enclosing globe, approximately 8 inches in diameter, light brown and old ivory in tone and design with wall bracket to match.

There are three bedrooms which we shall call the blue room, the pink room, and ivory room, these colors lending themselves most particularly to the charm of the bedroom. Let us assume that the room in the lower right hand corner is the blue room. The walls are blue and the draperies have blue for their predominating color. The lighting shops are showing most attractive

house fixtures in ivory finish with delicate blue designs for use with semi-indirect bowls approximately 10 inches in diameter. Provision has been made for four brackets on one side of the room. These can be secured of the same design as the central fixture and having the same design on the glassware.

In the bedroom on the left, which we will designate as the pink room, the predominant color of the walls and draperies should be pink—almost rose in hue. Fitting close to the ceiling around the center outlet a charming effect can be secured by the use of a shower-type

luminaire deftly colored with a combination of rose and gray. Glass ball lamp shades can easily be secured to harmonize perfectly in color and design with the metal portions of the fixture. The same applies to six brackets around the walls, which should be of the candle type.

The ivory bedroom is found in the upper right hand corner of the plan. A single suspension old ivory luminaire should be used with an 8-inch ivory and tan enclosing globe with two wall brackets to match. In the closets a single chain pendant with open-type shades of white glass will be found very effective.

In the bathroom the ceiling fixture should be of white enamel, close type, equipped with a 6-inch or 7-inch plain white enclosing globe—the fitter size to be either $3\frac{3}{4}$ or 4 inches. The bracket over the mirror should also be white enamel and equipped with an oval shade of white glass.

In all the rooms of this house we have endeavored to get a model home lighting installation which, if adopted with variations to suit the individual taste, should result in efficiency, beauty and softness of color, at a cost which is not excessive. This installation has been worked out by an illuminating engineer and is found to be sound practice.



Home Sewing Is Play When Electricity Helps.



"His" Shirts Will Suit Him if Done at Home.

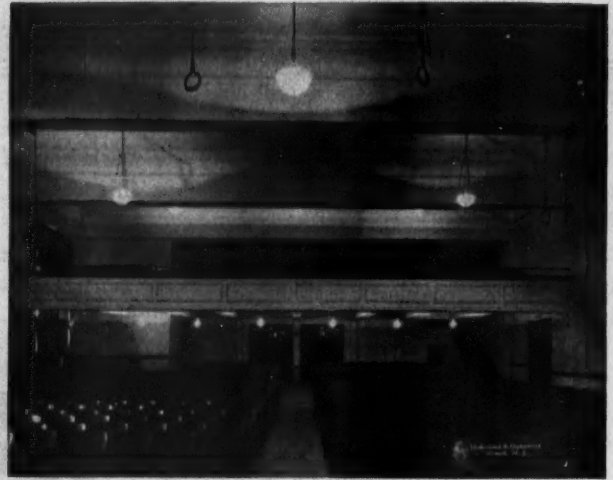
Electricity in the Public School

THE use of electricity in schools has become of the greatest importance. Not only is it indispensable for illumination, but it is also employed for ventilating, used for cooking in some cases, in the laundry if there be one in the building, and in the chemical and physics laboratories for operating the program clocks.

Of prime importance is the subject of illumination, and special consideration should be given for a satisfactory combination of natural and artificial lighting, which is one of the most exacting problems. Eye troubles prevalent among school children make it necessary that great care should be taken to reduce to a minimum any strain on their eyes. Proper lighting of a school-house should be considered not an expense but an economy. If because of defective vision a student is forced to spend one extra year at school the cost of teaching this one student for a longer period than normally will much more than offset any of the expenditures necessary for proper lighting.

A. L. Powell and A. D. Bell, two illumination experts, have gone into the subject of school lighting to a great degree. They have made tests of all kinds to learn what lighting is best suited for the classroom, and the results of their investigations are most interesting.

It is self-evident that the proper amount of light must be supplied for any kind of work. The correct intensity is necessary in order that everything that is to be seen may be seen clearly and without fatigue. No matter what system is used, unless enough light actually reaches the desks, the lighting system is inadequate. In the electrical industry the unit of the inten-



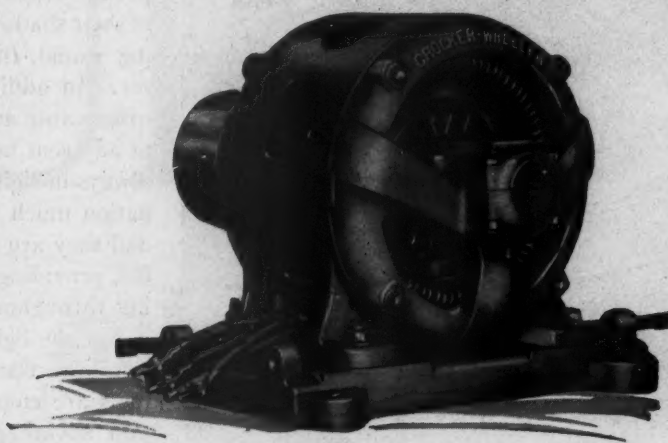
A Semi-Indirect System of Lighting Applied to a School Auditorium. The main lamps are 500-watt capacity, and those under the balcony are of 200 watts.

sity of illumination is a foot-candle. It may be defined as the illumination on a surface normal to a one-candle-power source at a distance of one foot. It is measured by means of a foot-candle meter or other portable photometer. It is desirable to provide in the classroom an intensity of 5 to 7 foot-candles on desks; in the study-room 6 to 10 on the desks; in the office 6 to 8 on the desks; in the cloak-room 1 to 3 on the floor; in the corridor 1 to 2 on the floor; in the laboratory 8 to 10 on the tables; in the auditorium 3 to 6 on the floor; in the drawing-room 8 to 12 on the tables. It is seen, therefore, that the intensity of light in the various rooms should be measured by the foot-candle meter placed on the floor, desks or tables, as the case may be, since these are the important places in which to have the light. While such values as given above will produce satisfactory results, the higher intensities rather than the lower ones are recommended. With the higher intensities, an increased degree of perception is obtained. If increased production in industrial plants and offices can be profitably brought about by high level lighting, why should not increased speed and accuracy of accomplishment on the part of the pupils likewise be worth while?

It is unfortunate that sometimes students are compelled to work under less light than is provided in industry for similar operations. In reality more light is needed because the pupil in the process of learning has to give closer visual attention than the workman to whom a proc-



In This Example of Direct Lighting, an Open Reflector Is Used to Good Advantage—Geo. C. Thomas High School, Philadelphia.



A Simple Motor Superbly Built

*Crocker-Wheeler Form "Q" Induction Motor—
2 and 3 Phase, 60 Cycle, 1 to 300 H. P.*

THE electrical design of a Squirrel Cage Motor is a compromise between a number of desirable qualities such as high efficiency, high power factor and high torque. Crocker-Wheeler, Form "Q" Motors are so designed as to give what years of experience has shown to be the best all around performance for general purpose motors.

In the refinements of their construction every make of Squirrel Cage Type Motor is different. They run the whole scale from those that give nothing but trouble to those that give nothing but continuous satisfactory service.

It depends on the value the maker puts on his good name, and his determination that

his product shall increase his prestige, plus his electrical knowledge and ability.

Crocker-Wheeler Squirrel Cage Form "Q" Induction Motors can be depended upon to give you satisfactory service under the most severe service conditions. Mechanically and electrically they embody the most desirable features.

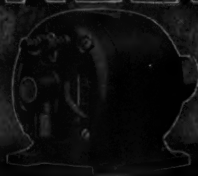
Form wound coils heavily insulated, vacuum impregnated, moisture proof and acid resisting, heavy shafts and large bearings, in all sizes from 1 H. P. to 300 H. P.

These motors will carry their full load continuously with a 40° rise.

CROCKER-WHEELER CO., Ampere, N. J.

CROCKER-WHEELER MOTORS

Niagara's Rival for Dependable Power



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



An Excellent Example of Efficient Gymnasium Illumination. The Marquette College Gymnasium, Milwaukee.

ess becomes more or less automatic. The selection of the Mazda C lamp has made it possible to provide high level lighting and thus avoid eye-strain at no greater cost than would have been incurred to secure a very low intensity not many years ago.

Great care should be exercised to reduce to a minimum the glare resulting from illumination, and its harmful effects cannot be over-emphasized. The newly developed lamps with their increased brightness are generally far too brilliant to be in the field of view without producing a blinding effect and reducing the ability to see. It is necessary, therefore, to reduce the brilliancy of the light by means of diffusing globes, shades or reflectors. Diffusing the light also softens the shadows so that severe contrasts are less likely to occur. It is not desirable, however, to go to such an extreme diffusion that shadows are entirely eliminated, for they are very essential to show the contour or shape of objects. Over-diffusion or flat illumination is both trying to the eyes and unpleasant.

Attention must also be paid to the walls and other objects in this matter of diffusing the light. Dull surfaces rather than polished ones are desirable here, and even a depolished or waxed finish is more desirable than varnished or highly polished surfaces on the desks and other furniture, as the latter produce mirror-like effects in reflecting the light sources.

In the cases of distribution of light there are two extremes: one known as local lighting and the other as general illumination. In local lighting we provide relatively low candle-power light sources, located rather close to the work, furnishing a high intensity of illumination over a small area. This means of illumination is sometimes used in drafting rooms, machine shops and sewing rooms, and is often under the control of pupils

who may know very little about the proper use of lamps and often work in their shadow. Good general lighting would, therefore, be much better. In addition, local lights very often cause annoying glare to pupils at adjacent tables and the system is always unsightly. In general illumination much larger lamps are used and they are hung as high as possible, providing almost uniform lighting throughout the room.

For the lighting of school, direct, semi-direct and totally indirect systems are employed. Each has certain advantages and disadvantages and there are several factors entering into the selection of the system, such as quality of illumination produced, convenience of maintenance, appearance of the installation, efficiency of the system, ability to provide the desired intensity and the cost of installation. More outlets are

required for direct lighting than for an indirect lighting system in order that multidirectional light may be provided. It is always desirable to hang units as high as possible to keep them out of the field of view. No lighting units should come below a line extended from the eye of a student in the rear seat to a point 2 feet above the blackboard. The wiring should be so arranged that the switches are readily accessible. It is sometimes desirable to have one circuit control the lamps near the instructor's desk, so that he or she can work after hours without having all the room lighted, and the remaining lights on a separate switch.

The fixture in the classroom should be simple in character. The means of suspension of any type of lighting unit should be such that there is absolutely no danger of the light falling, and especially in the

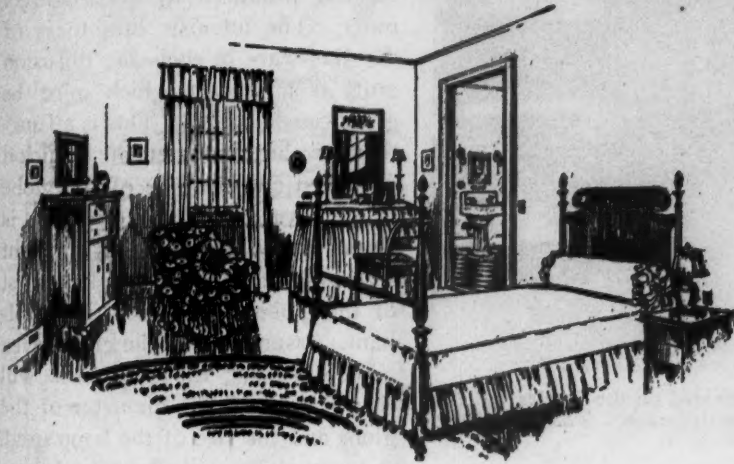


These Fixtures in the Hartford High School Lunch Room Use 100-Watt Bowl-Frosted Lamps and Are Mounted 10 Ft. from the Floor. They provide ample light.

Electrify All Buildings

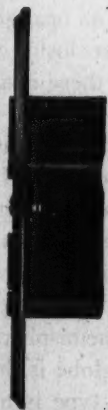
149

HUBBELL



Hubbell Convenience Outlets Add the Finishing Touch—

When the home is **finished**, and the tour of inspection is "in progress, notice how the "little things"—such as Hubbell Convenience Outlets in every room—make the biggest impression!



Profile View of Duplex Convenience Outlet—note shallow body.

Hubbell Convenience Outlets

Single and Duplex.

Double "Te-" Slots take all kinds of Standard Attachment Plug Caps.

Bevelled Te-Slots, easy to locate with Cap Blades.

Porcelain or Composition Bodies.

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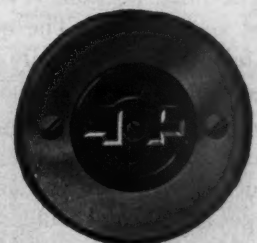
San Francisco: 612 Howard St.
Philadelphia: Philadelphia Bourse,
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Duplex Convenience Outlet No. 6257, porcelain; No. 6290, composition, with Plate No. 6258.



Single Convenience Outlet No. 5547, porcelain; No. 5550, composition, with Plate No. 5548.



Single Convenience Outlet with Round Plate, assembled; No. 6282, 2 3/4"; No. 6283, 3 1/4".



ELECTRICAL WIRING DEVICES

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



An Average Foot-Candle Intensity of 9.5 Is Provided on the Tables by This Style of Direct Lighting. The lamps are 200 watts each. The Milwaukee Trade School.

case of indirect units it is desirable to have some convenient means of cleaning. Totally indirect lighting produces a very high quality of illumination, but requires a relatively large wattage for a given intensity. With such a system, there is little possibility of glare, and the light is very soft and comfortable to work under. Glaring reflections are at a minimum, but the inverted bowls tend to accumulate considerable dirt, and unless they are cleaned frequently the light output is materially reduced. Semi-indirect lighting is an intermediate practice, most of the light from the lamps being directed to the ceiling, with a slight amount transmitted through the glassware. It is slightly more efficient than totally indirect lighting, the illumination is well diffused and such shadows as are produced are very soft and do not cause annoyance. The best forms of semi-indirect units for school work employ dense glass or some other means of reducing the brightness of the lighting unit.

When direct lighting is deemed advisable, dense opal or etched prismatic reflectors should be used. These transmit but a small portion of the light, and, therefore, are not very bright. The question of the lamp should also be taken up carefully as well as the lighting unit; the diffusing bulb or bowl-enameled Mazda C lamp should always be employed in preference to the clear lamp, as these finishes produce better diffusion, reduce reflected glare and soften shadows. The flat type reflectors should never be used in a schoolroom, for it is almost impossible to conceal the filament from view when using this type of shade. Opaque reflectors are generally unsuited, as the ceiling would be very dark when these are used. The most generally applicable equipment for classroom lighting, at the present time, is the enclosing, diffusing, direct-lighting luminaire. If the proper type is chosen, a

well diffused illumination, quite free from direct or reflected glare, is produced. Although the major portion of the light is directed downward, a considerable amount is transmitted upward, thus giving a cheerful appearance to the room and a character of illumination similar to that produced by semi-indirect units. The intrinsic brightness of the glassware in enclosing diffusion units is a subject which must be given consideration. This is a function of the character of diffusion produced and the size of the globe or glassware. If the diffusion is inadequate, there will be a bright spot opposite the lamp and the rest of the globe considerably less brilliant. Assuming that the globe gives good diffusion, the brightness will then depend on the diameter of the globe and the size of the lamp used.

A given globe might be entirely satisfactory with a 100-watt lamp but very unsatisfactory with a 300-watt lamp. For the positions and heights ordinarily encountered in class-room lighting, a maximum brightness of 2 to 4 candlepower per square inch should not be exceeded.

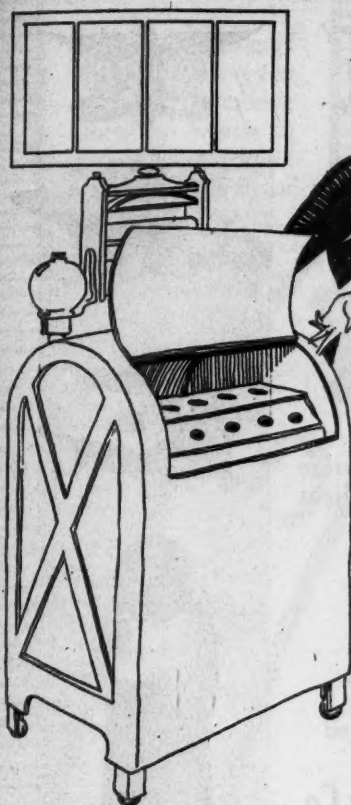
Some of the forms of fixtures under consideration have a portion of the globe of clear glass, and with such equipment it is well to examine it for the possibility of filament reflections or images in the unit itself. With the globe of uniform character such as opal glass, these do not occur. The so-called semi-enclosing unit must be very carefully designed to avoid these images.

There is comparatively little choice between the various fixtures of the type under consideration as to their efficiency with light colored surroundings. If the ceiling is dark, it is apparent that any type which emits considerable light upward will not be as efficient as the semi-enclosing unit or those provided with some sort of a reflector which have the property of directing the major portion of the light into the lower hemisphere.

The shape of the uniformly diffusing globe is, however, very important. The squat or flat type is more efficient than the spherical or stalactite shape in directing the light downward and emitting less toward the upper part of the side walls where it is of comparatively little service. Light on the ceiling is desirable when it is reflected downward, as it reduces contrasts and softens shadows. It is therefore generally advisable to paint the ceiling a light tint regardless of the type of lighting installed.

The lighting of lunch, wash, locker and cloak rooms is very utilitarian and the decorative element is not especially important. The desirable intensity of light should be supplied in the most efficient manner. Direct lighting with prismatic or dense opal bowl reflectors,

(Continued to page 154.)



If it's **PARANITE** it's right

Of course it is annoying when the wash machine refuses to work—and on a bridge day, too.

But how much more annoying it can be if the trouble is not with the wash machine or the cord, but with the wires behind the walls.

It is difficult to be deprived of electrical conveniences when one is accustomed to them—for days, perhaps, while electricians bore into walls, fishing blindly for wires. The surest way to guard against such deprivation and expense is to prevent the use of inferior wire when homes are built.

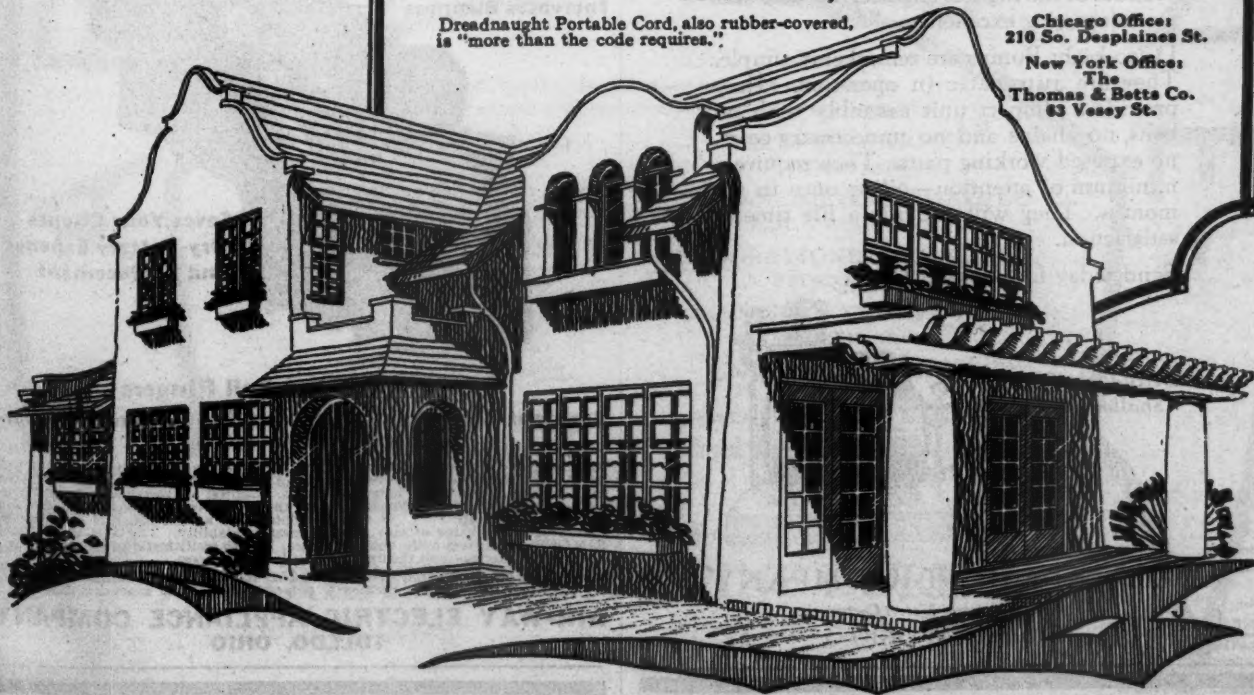
Experienced architects and builders specify nothing except wire meeting the requirements of the Fire Underwriters—with safety from fire and the day-in and day-out use of electrical appliances assured.

For thirty-two years PARANITE rubber-covered wire has been known as a better than standard product. When PARANITE is specified no chances are taken on the wire part of the job.

Indiana Rubber & Insulated Wire Co.
Jonesboro, Indiana

Dreadnaught Portable Cord, also rubber-covered,
is "more than the code requires."

Chicago Office:
210 So. Desplaines St.
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Thomas & Betts Co.
63 Vesey St.

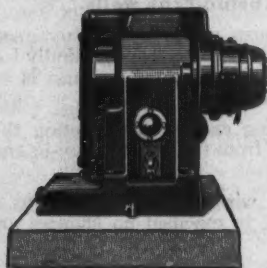




Back of DELCO-LIGHT PUMPS

You can have the utmost confidence in the superior efficiency of a Delco-Light Pump because back of this product stands the great organization that has made Delco-Light home electric plants famous throughout the world.

And back of the Delco-Light Company is the General Motors Corporation, the second largest industrial group in the world of which Delco-Light Company is a subsidiary.

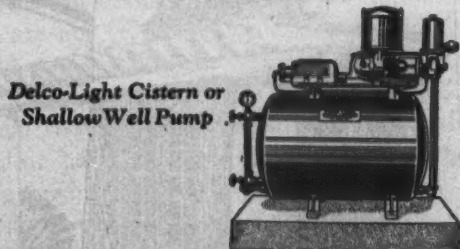


Delco-Light 1/2 H. P.
Deep Well Pump

In Delco-Light Pumps you are guaranteed a product of the highest engineering skill and manufacturing excellence.

Delco-Light Pumps are remarkably simple. They are automatic in operation. They provide a compact unit assembly with no belts, no chains and no unnecessary gears, no exposed working parts. They require a minimum of attention—oiling once in six months. They will provide a life time of satisfaction.

Send today for booklet AB 9.



Delco-Light Cistern or
Shallow Well Pump

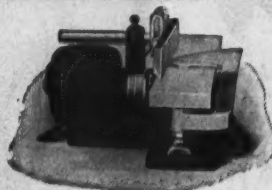
DELCO-LIGHT COMPANY

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Woodworking
Machinery

Price List will also
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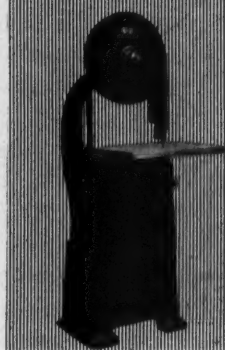


These machines operate
from any electric light
socket.

Saw Bench,
Band Saw,
Jointers,
Sanders,
Wood Trimmers,
Oilstone Grinders,
Tool Grinders,
Knife Grinders and
Glue Heaters.

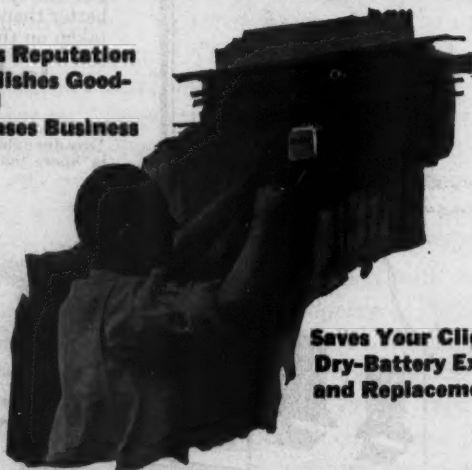
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1009 Clancy Ave.
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A Touch of Completeness

**Builds Reputation
Establishes Good-
Will
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**Saves Your Clients
Dry-Battery Expense
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**Install Air-Way Bell Ringers
Constant Electric Current for Bells, Buzzers, Door-
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Eliminate one of the greatest annoyances home-owners have to put up with bells and buzzers going dead—by installing an AIR-WAY BELL RINGING TRANSFORMER in every wired home you build. Suggest its installation in old home jobs—where wired for electricity. Your thoughtfulness for your customer's convenience is a certain of creating profits. It's a little touch of completeness that adds to the value of purchases and increases reliability. The AIR-WAY BELL RINGER guarantees a life time of service. It is as easily installed as connecting a set of dry-batteries—and the first low cost is the only cost.

Get particulars of the AIR-WAY BELL RINGER from your Electrical Dealer. He is in a position to cooperate with you to your advantage.

**AIR-WAY ELECTRIC APPLIANCE COMPANY
TOLEDO, OHIO**

The vogue of painted
woodwork gives you
an excellent talking
point on which to
sell new trim for old
homes as well as for
new ones.

Arkansas Soft Pine
Satin-like Interior
Trim has the correct
physical make-up to
insure the finest ob-
tainable results in
painted woodwork.

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THE manufacturers of
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popularity of painted wood-
work have prepared a special
book on the subject, which
will be of value and profitable
interest to you and of practical
help to your customers. Write
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*All stock bearing the Arkansas Soft Pine trade-mark
is manufactured and sold exclusively by the following companies:*

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FREEMAN-SMITH LUMBER CO. MILLVILLE, ARK.	

Composing the

ARKANSAS SOFT PINE BUREAU
Boyle Building Little Rock, Arkansas

Electricity in the Public School

(Continued from page 150.)

with outlets placed symmetrically throughout the room, is suitable, allowing from $\frac{1}{4}$ to $\frac{1}{2}$ watt to each square foot of floor area.

The primary function of corridor illumination is to provide light for anyone to pass along without danger of stumbling or interfering with another person, but the general appearance must be taken into consideration. A small ornamental type of fixture is desirable particularly in the lobby and main corridors. The lighting can be accomplished with relatively low wattage lamps, on fairly wide spacings, provided diffusing glassware is employed.

Laboratories require a relatively high intensity of illumination in order that the progress of experiments may be carefully watched. The general layout suggested for the classroom is satisfactory for the laboratory. In the chemical laboratory, however, acid fumes will attack metal parts of ordinary fixtures and soon make them useless; for this reason porcelain enameled reflectors and porcelain receptacles or sockets are well adapted.

Convenience outlets are a most desirable feature of the wiring layout for the school, and will be found of great assistance in its maintenance. They provide means for the use of vacuum cleaners, electric fans or other appliances. The foot-candle meter referred to above is now on the market and available at a reasonably low price. This instrument enables one to read, at a glance, the illumination on the desk, workbench or table. It is most simple in operation and very compact, and will prove very valuable to boards of education, architects, designing engineers and others having charge of school lighting. With its aid they are enabled to check up existing installations and determine whether the intensities conform to modern standards which insure protection of the eyesight. In planning new buildings, such interesting information on both natural and artificial illumination conditions can be obtained if the device is used.



How to Wash Linoleum Floors

MANY soaps which can be used safely on linoleum are automobile soaps. Mobo soap and Flaxsoap, for instance, are well-known automobile soaps and can usually be had from auto accessory stores and garages. Probably the best known, and one of the most satisfactory of these approved soaps, however, is the old household favorite, Ivory, sold in practically every grocery store and easily obtainable.

Fire underwriters allow a credit of seven per cent if linoleum is laid in fireproof buildings instead of wood floors.

Instances are often reported where linoleum floors have checked or prevented the spreading of fires. And this ruling by insurance authorities strengthens the talking point that linoleum floors reduce the fire hazard.



June Construction Falls 14%

JUNE construction volume was 14 per cent under May, according to the F. W. Dodge Corporation. The decline was general except in portions of the Central West. Total contracts awarded during June in the thirty-six eastern states (including about seven-eighths of the total volume in the country) amounted to \$371,034,000. In spite of the decline, this figure indicates a large volume of work started. Any month that shows more than \$350,000,000 for these thirty-six states is a heavy month. The decline from June, 1922, was 6 per cent.

Last month's total included \$136,638,000, or 37 per cent, for residential buildings; \$75,596,000, or 20 per cent, for public work and utilities; \$55,776,000, or 15 per cent, for industrial buildings; \$44,757,000, or 12 per cent, for business buildings; and \$26,175,000, or 7 per cent, for educational buildings.

The June figure brought the total for the first half of the year up to \$2,109,524,000. The increase over the corresponding period of last year was 9 per cent. During the past three months the lead over last year has been dwindling. It seems probable that the peak of this year's construction volume was passed in May. Although the second half of the year is not likely to have quite so large a construction volume as the first half, activity seems likely to keep on at a very considerable rate.

Residential buildings, amounting to \$893,510,000, or 42 per cent, of the total construction, continued to lead all other classes during the past six months. This is one of the three classes which shows an increase over the first half of 1922, the increase being 20 per cent. Public works and utilities increased 3 per cent, and industrial buildings increased 68 per cent, the biggest increase reported.

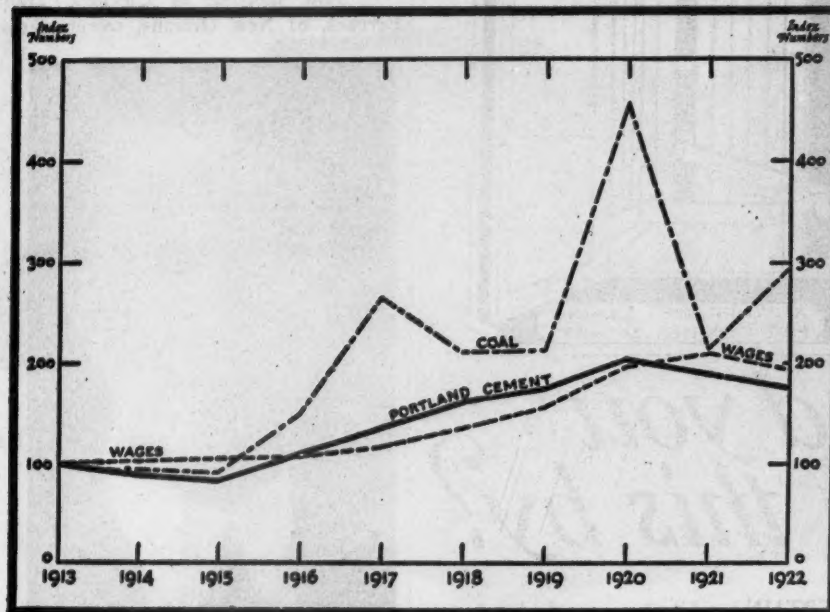
Contemplated new work reported in June amounted to \$569,008,000, a decrease of 11 per cent from the amount reported in May.



Canadian Building Permits

THE value of the building permits in fifty-six cities during May was practically the same as in April, there being an increase of .3 per cent only, while as compared with the figures for the corresponding month of last year there was a slight decline of .8 per cent. According to statements tabulated by the Dominion Bureau of Statistics, building to the value of \$17,593,615 was authorized in comparison with totals of \$17,544,061 and \$17,743,216 in April, 1923, and May, 1922, respectively.

Forty-seven cities furnished detailed reports, showing that they had issued approximately 2,500 permits for dwellings, valued at over \$9,500,000; the number of dwellings to be built would be somewhat larger, since the construction of several houses or apartments is very frequently authorized by one permit. Some 4,700 permits were issued for garages, stores, factories, etc., etc., at an approximate valuation of \$5,800,000. In addition, authority was given for engineering works in other cities, together estimated to cost nearly \$1,800,000.



Coal prices from Survey of Current Business, February 1923.

Cement prices from U. S. Geological Survey.

Wages, from November (1922) Monthly Labor Review, Bureau of Labor Statistics.

More for Your Money

By measuring things against each other as our grandmothers did when they swapped eggs for calico, we get the clearest idea of values.

Coal and wages make up more than half the manufacturing cost of cement.

The chart above shows price fluctuations for portland cement, coal and wages during the past ten years. In each case 100 is used to represent 1913 figures, by the Government departments

which compiled these statistics.

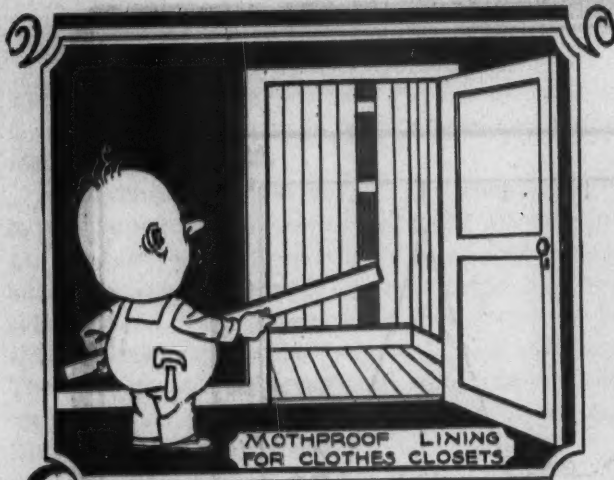
Translated into "eggs and calico" language this chart shows that a ton of coal would buy nearly twice as much cement in 1922 as in 1913. A day's wages also would buy more cement in 1922 than in 1913.

This means that even though coal and wages make up more than half its manufacturing cost, cement is now relatively lower in price than either coal or wages.

PORTLAND CEMENT ASSOCIATION

*A National Organization
to Improve and Extend the Uses of Concrete*

Atlanta	Des Moines	Los Angeles	Parkersburg	San Francisco
Boston	Detroit	Milwaukee	Philadelphia	Seattle
Chicago	Helena	Minneapolis	Pittsburgh	St. Louis
Dallas	Indianapolis	New Orleans	Portland, Oreg.	Vancouver, B.C.
Denver	Kansas City	New York	Salt Lake City	Washington, D.C.

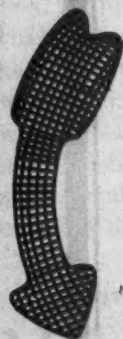


Wood you pass this by?

A CERTAIN architect was asked why he thought people were demanding Kilmoth clothes closets instead of using a liquid moth killer. "Because," he replied, "Kilmoth is the NATURAL way."

In this he has voiced the opinion of many of the more progressive carpenters, builders and contractors who have installed Kilmoth closets throughout homes, apartments and hotels. The NATURAL way is the dependable way, and the permanent way. No attention is needed after Kilmoth installation, which is a big feature in appealing to the housewife.

Sign this



The ease with which it is handled, the liberal discounts realized from its sale, and the growing demand for this coming household necessity makes a great opportunity for all handlers of lumber to do an increased and profitable business.

Exclusive territorial rights given to responsible distributors.

KILMOTH

Products Corp. 50 Union Square, New York

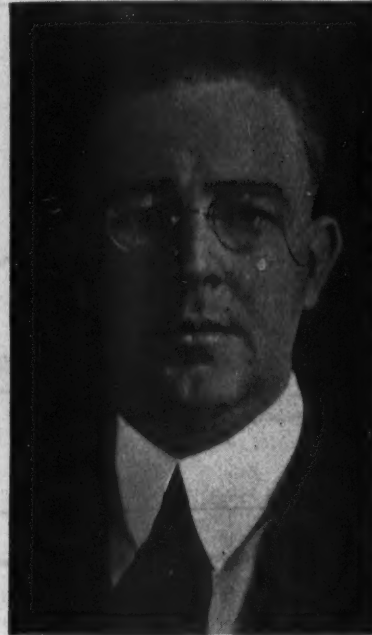
Please send me your Distribution Plan.

Check opposite your business ☐ Builder or Contractor
☐ Sash Door, Mill and Supply ☐ Lumber and Supply

KILMOTH is AROMATIC
RED CEDAR

Southern Pine Association Elects H. G. Berckes as Secretary Manager

DIRECTORS of the Southern Pine Association at their June meeting in Chicago, Thursday, elected H. G. Berckes, of New Orleans, secretary-manager of the association, to succeed the late J. E. Rhodes, whose death occurred June 2. Mr. Berckes has been connected with the Southern Pine Association staff almost since its organization in 1915 and has been assistant secretary since 1919.



H. G. Berckes
Secretary-Manager Southern Pine Association.

Mr. Berckes is a native of New Orleans and is thirty years old. He is one of the youngest trade association executives in the country to be entrusted with the direction of an organization of the importance of the Southern Pine Association, one of the largest organizations of lumber manufacturers in the world.

The directors also decided to continue in the future the policy and all activities which have been conducted by the association for the industry in the past.

Common Brick Mfrs. Association Will Hold 1924 Meeting at Los Angeles

THE enormous growth of the brick industry on the Pacific Coast is evidenced by the decision of the Common Brick Manufacturers' Association to hold its 1924 meeting in Los Angeles, Cal. Through excursion trains will be run for the accommodation of brick manufacturers and their families, starting points probably originating at Albany, Chicago, and Kansas City.

Cement Making Pictured in New Film

MUCH of the unusual equipment involved in making cement is interestingly illustrated in a two-reel moving picture called "The Story of the Manufacture of Portland Cement," just released for general showing.

From the moment that a great blast breaks loose a cliff of limestone in the quarry to the time when the finished cement goes into storage in big concrete bins, the process of manufacture is fully covered in the film.

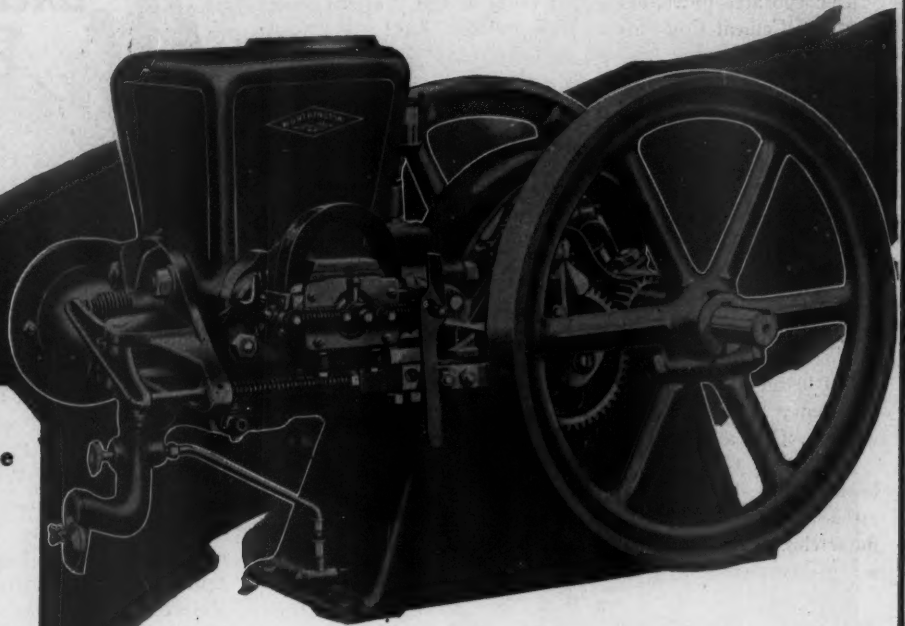
This film can now be secured without charge by interested organizations through any office of the Portland Cement Association, or from association headquarters at 111 W. Washington St., Chicago.

Colonel Sawyer Appointed Secretary of Associated General Contractors

COL. D. H. SAWYER has been appointed secretary of the Associated General Contractors of America to fill the place of Mr. Eugene Young, who recently resigned to enter business in Minneapolis.

Worthington Experience

- 1** Designers and builders of internal combustion engines for 31 years.
- 2** Makers of engines from 1½ H. P. to 2,400 H. P.
- 3** Engines built to date aggregate over 446,000 H. P.
- 4** Manufacturers of power plant equipment for 83 years.
- 5** A complete modern factory and organization specializing on kerosene-gasoline engines 1½ to 25 H. P.
- 6** Allied with the contractors' trade for 53 years.



**If there were
a dependability
rating**

If gasoline engines could be rated on the basis of their reliability, or ability to keep going under all conditions, the contractor would have a definite means of determining the performance of the power plant he was getting with any

concrete mixer, hoist or pumper.

As it is, the contractor cannot specify an AAA-1 trustworthy engine, but he can see to it that his machines are equipped with power producers built by experienced makers.

W-248.8

WORTHINGTON PUMP AND MACHINERY CORPORATION

Executive Offices: 115 Broadway, New York City. Branch Offices in 24 Large Cities

WORTHINGTON

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Harrison, N. J.

Laidlaw Works, Cincinnati, Ohio.

Hazleton Works,

Hazleton, Pa.

Gas Engine Works, Cudahy, Wis.

Power & Mining Works
Cudahy, Wis.Snow-Holly Works
Buffalo, N. Y.

Epping-Carpenter, Pittsburgh, Pa.

Atlas Acquires Western States Portland Cement Company

THE Atlas Portland Cement Company (of Kansas) has been incorporated to acquire the property of the Western States Portland Cement Company at Independence, Kan.

The well-known quality and uniformity of "Cowboy" brand which has heretofore been manufactured in Independence is already established. The Atlas company will link with this quality the same dependable service which has been maintained for over a quarter of a century, which has resulted in their permanent clientele and which justifies the slogan that "Atlas is the standard by which all other makes are measured."



Henry Disston & Sons, Inc., Open Atlanta Branch

TO better serve their customers in the Southeastern states, Henry Disston & Sons, Inc., are opening a new branch in Atlanta, Ga., at 130-132 Marietta Street.

Mr. E. F. Cooper has been placed in charge of the new branch. Mr. Cooper is a practical man and has been interested all of his life in the lumber and saw manufacturing industries. He has been with Henry Disston & Sons, Inc., as a representative of the mill goods department for eight years.



Terra Cotta Specifications Under Development

THE National Terra Cotta Society and the American Institute of Architects, working through their respective committees, have formulated a set of specifications for architectural terra cotta and its setting.

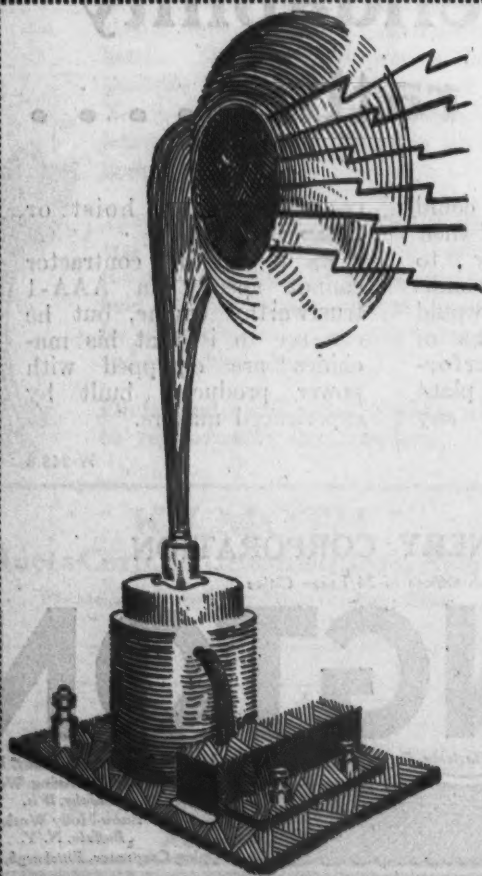
BOOKS, BOOKLETS and CATALOGS RECEIVED



THE literature and publications listed below are now being distributed and the concerns mentioned will be glad to send copies to any of our readers who will write and ask for them.

"Structural Members and Connections" is an extraordinarily useful book, the contents of which have been compiled by a staff of specialists headed by George A. Hool, and W. S. Kline, Professors of Structural Engineering at the University of Wisconsin, and who acted as Editors-in-Chief. The contents cover, briefly, General Theory, Design of Steel and Cast-iron Members, Splices and Connections for Steel Members, Design of Wooden Members, Splices and Connections for Wooden Members, Design of Reinforced Concrete Members, and proper Appendices. The McGraw-Hill Company, 370 Seventh Ave., New York, N. Y., is the publisher, and the price, \$6, is a very reasonable one, in the Editor's opinion.

"Mechanical Testing, Volume Two," published by E. P. Dutton & Company, New York, N. Y. Price, \$10. This book, one of the Directly-Useful Technical Series, is by R. G. Batson and J. H. Hyde, engineers standing high in



If Allmetal Weatherstrip Company Could Broadcast

THE PROFITS TO BE MADE IN THE WEATHERSTRIP BUSINESS

Every Carpenter, Contractor and Builder would get busy at once.

The Fall of the year is the Time to earn real money in this business. Coal is high and scarce. The demand for Allmetal Weatherstrip will be greater than ever.

We have just moved into a large new factory. Our manufactured stock makes it possible for us to fill orders within twenty-four hours. Allmetal Weatherstrip is a simple pattern. It is easy to sell and easy to install.

Write for Our Agency Plan

ALLMETAL WEATHERSTRIP CO.
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SIGN AND MAIL THIS COUPON NOW

ALLMETAL WEATHERSTRIP CO.,
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Gentlemen: Without obligation tell me of your plan.

Name.....
Address.....
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display a composition of utility, durability and good, pure architecture without any "gingerbread." No buildings are too large or too small for our personal and prompt attention.

We develop your own ideas into a practical set of plans and specifications which can be executed to the smallest details into a building that can be built within your means and to your entire satisfaction.

Correspondence Invited

G. W. ASHBY, Architect
1511 W. Jackson Blvd.
CHICAGO

their profession, and both Senior Assistants in the Engineering Department of the National Physical Laboratory, Teddington, Middlesex, England. The volume treats of the Testing of Prime Movers, Machines, Structures and Engineering Apparatus, confining itself to descriptions of mechanical methods of testing, and is to be commended whole-heartedly as of real service to the technical engineer, the manufacturer and the student.

Union Fibre Co. Bulletin No. 18 on "Anti-Vibro-Bloc" is at hand from its manufacturers, the Union Fibre Co., Inc., Winona, Minn. The Bulletin explains that "Anti-Vibro-Bloc" is a new material for sound deadening purposes, consisting of mineral wool held in suspension with a flax fibre blended with a chemically retro-active agent, waterproof, and preserving the original insulating qualities of mineral wool.

"Pulling Together," by John T. Broderick, Robson & Adey, Publishers, Schenectady, N. Y. Cloth, 12 mo., 167 pp. Price \$2.00 postpaid.

In this book we have the gospel of an advanced social human viewpoint preached from the standpoint of a business man who found its application worth while in his organization.

"Ventilating and Humidifying Specialties," Catalog from C. C. Shipp & Co., Indianapolis, Ind., is devoted to the well-known D-I Heating, Ventilating and Humidifying System for Schools, Hospitals and Other Public Buildings. It also lists the various D-I Specialties, and gives the general form of specifications and details of complete installations of Standard D-I Units.

"Copper, the Ideal Roof" is published by the Copper and Brass Research Association, 25 Broadway, New York, N. Y. It emphasizes, by word and illustration, the Association's recommendation of copper as making the ideal roof,—practical, permanent, economical and beautiful.

"Brass Pipe and Fittings for Permanence" is a bulletin issued by the Copper and Brass Research Association, 25 Broadway, New York, N. Y. It is devoted to spreading the gospel of the superiority of brass in pipe, pipe-fittings and plumbing installations.

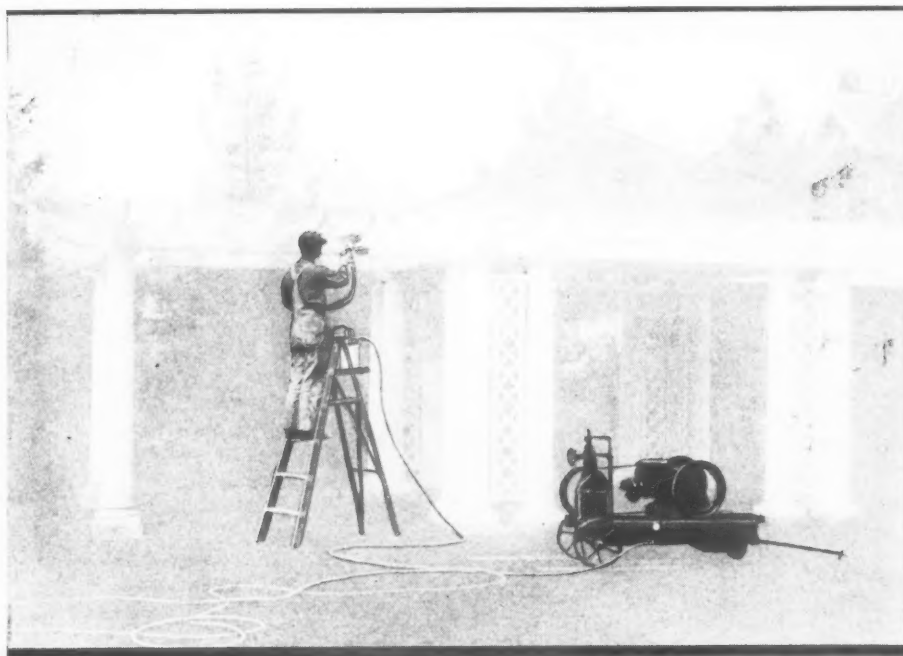
"Standardized Requirements for the Construction of Elementary School Buildings," is a booklet issued by the Board of School Commissioners of the City of Indianapolis, Ind., and should, we think, be interesting reading for the architect or builder.

"Keeping Down the Cost of Your Home" is a booklet issued by the Curtis Companies Service Bureau, Clinton, Iowa. It shows how by the use of its specialized, standard woodwork such as doors, windows, porch work, stairs, trim, exterior mouldings and built-in furniture good taste in home design may be achieved at reasonable outlay.

"Restful Rooms" is another book due to the collaboration of the Curtis Companies Service Bureau, Clinton, Iowa, with the New York architectural firm of Trowbridge & Ackerman. It will be apparent from reading this book that well designed and well proportioned woodwork need no longer be expensive.

"American Instantaneous Water Heaters" is issued by the American Heater Corporation, St. Louis, Mo., and contains illustrations and fundamental facts about American Instantaneous Water Heaters. These are designed to heat water most economically, with thermostatic control, have standard connections and can be installed by any plumber.

"Garden Furnishings" is a very attractive book of bird baths, fountains, vases, pedestals, flower boxes, tables, seats and sundials, in artificial stone, issued by the Hartmann-Sanders Co., 2155 Elston Ave., Chicago, Ill. Informing, interesting and suggestive.



DeVilbiss **Spray-painting System**

(Complete, Practical, Reliable Equipment for Every Painting Requirement)

The DeVilbiss Mfg. Co.

The DeVilbiss spray gun applies any kind of paint at the lowest practicable air pressure, and is easy and non-tiring to operate.

The adaptable DeVilbiss Spray-painting System will unfailingly serve you to advantage and with profit—we should like to tell you about this more in detail. Address—

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An Outstanding Feature

A long performance record of making good in every field of painting, emphasizes **ADAPTABILITY** as one of the outstanding features of the DeVilbiss Spray-painting System.

This DeVilbiss *adaptability* means that you can spray-paint substantially the entire surface of houses and all that goes with them; spray-paint public, factory and other buildings, inside and out; spray-paint other structural surfaces, large and small, of wood-concrete-plaster-brick or metal. . . . And by doing all this *painting the DeVilbiss way* means that you can do *faster and more work*, get *improved and more satisfactory results*, make *bigger and more painting profits*.

The speed of DeVilbiss spray-painting averages 4 to 5 times that of hand-brushing. The sprayed coating thoroughly and uniformly covers the surface to be painted, and has greater hiding power than a brushed coat.

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OLD plaster walls to be recovered, partitions, new rooms in basement and attic—these are just a few of the money-making jobs you can do most satisfactorily with



The Wood Core Wall Board

The only wall board that has the **combined features** of greater strength, moisture-resisting and insulating qualities needed in a durable, sanitary wall lining.

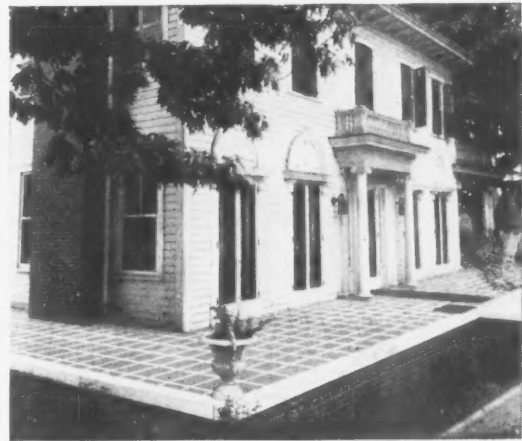
The wood core gives Compo-Board greater strength, stiffness and ability to resist hard knocks than any wall board with a center of pulp or fiber. And Compo-Board is as warm as a plaster wall a foot thick. Look for the wood core. None other is genuine.



Write today for sample and illustrated booklet showing many uses.

The Compo-Board Co.

5777 Lyndale Ave. N. Minneapolis, Minn.



COLORMIX FLOORS

The Charm of Colored Concrete

PORCHES, Sun Rooms and Terraces present opportunities for added beauty, durable and unfading, when tile-like Colormix Concrete Floors are used.

Colormix employs a new principle in coloring concrete. Dissolved in the mixing water of the floor topping, it dyes every particle of sand and cement a deep, rich color. At the same time Colormix increases the tensile and compressive strength of the concrete, producing in one operation at moderate cost a hardened non-fading, colored floor.

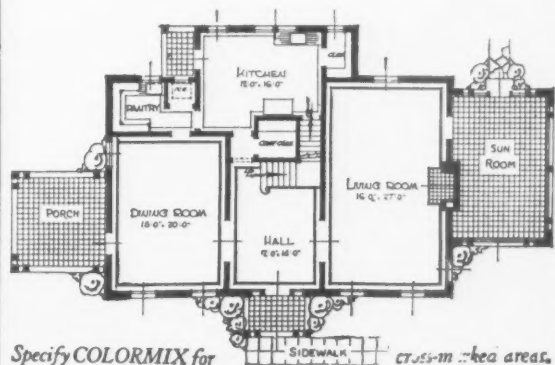
Seven Colors: Tile Red, Nile Green, Linoleum Brown, White, Black and Battleship Gray. Colormix gives you the practical equivalent of a tile, terrazo or linoleum floor at a decidedly lower cost.

The MASTER BUILDERS COMPANY

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Sales Offices in Eighty Cities

Send for Illustrated Handbook—in Colors



"Patents, Law and Practice," received from Richards & Geier, Patent and Trade Mark Attorneys, 277 Broadway, New York, N. Y. This book, intended for gratuitous distribution to those contemplating taking out a patent, is not intended to be an exhaustive treatment of the subject of patents. It is designed to serve as a convenient hand book, presenting a concise form for ready reference the features most necessary to be available to lawyers, manufacturers and inventors.

"Testite Sanitary Specialties" are interestingly illustrated and described in an attractive catalog issued by the manufacturers, the Groeniger Manufacturing Company, Columbus, O. These "Testite" specialties are the kind which make a strong appeal to the architect, builder, dealer and plumber—an appeal sure to be accentuated by the business-like way in which the catalog is gotten up.

"John Deere Corn Crib and Granary Blue Print Working Plans," likewise issued by Deere & Company, Moline, Ill., is an excellent companion portfolio for the company's catalog listed above. Besides the working plans this gives bills of materials covering twenty different sizes of cribs.

"Granite Stone Stucco" is an attractive book which describes the Holmes System of Pebble Dashing, and is issued by the E. W. Holmes Pebble Dash Company, Princeton, Ill. It is issued with the idea that interested inquirers may be able to develop individual successful pebble dash stucco businesses in their own locality.

"Dow Spiral Slide Fire Escapes" are described and illustrated in a folder, with incidental matter, at hand from the manufacturers. The Dow Company, Louisville, Ky. Typical installations of this unusually effective fire escape are shown, and testimonials from a wide range of users cited to show its extreme efficiency for school, hospital, factory, office building and institution use.

"Vaporproof Condulets with Reflectors," issued by

Crouse-Hinds Company, Syracuse, N. Y., describes and lists condulets that are particularly suited for marine work, flour mills, feed mills, grain elevators, oil refineries, wood-working establishments, paper mills, shoe factories, sugar factories, starch factories, coal and metal mines, chemical plants, or wherever vapors, fumes, gases or dust are present. Architects, builders and electrical contractors need this.

"The F W D Machine Shop Truck" is the title of a folder describing and giving full specifications of the new F W D machine-shop truck, manufactured by the Four Wheel Drive Auto Company, Clintonville, Wis. This is, to all intents and purposes, a compact, practical and complete repair shop mounted on a 3-ton F W D chassis, transport type body and detachable prairie schooner top.

"Joslin's Estimating the Cost of Building" is at hand from the publishers, the U. P. C. Book Company, Inc., 239 West Thirty-ninth Street, New York, N. Y. Price, \$2.50. This book has been revised and brought up to date and additional matter incorporated in the back on "Rules on Estimating."

"Drafting Room Standards" is a portfolio issued by the Truscon Steel Company, Detroit, Mich., and we speak advisedly when we state it to be the finest portfolio on steel window installation which has come to our desk in many months. Practically all of the questions one can ask about steel windows are answered graphically, and not only are the architectural detail sheets drawn to scale for tracing on plans, but they are models of artistic draftsmanship. Specifications are likewise included.

"Interior Sunshine" is a little booklet with a story, simply told, of how one woman made her home beautiful by introducing Interior Sunshine—proper electric lighting from convenient electric wiring. It is issued by the Society for Electrical Development, 522 Fifth Ave., New York, N. Y.

A melancholy chap was he
Until an "Ad" he chanced to see
which said!

"BOMMER SPRING HINGES" are the best

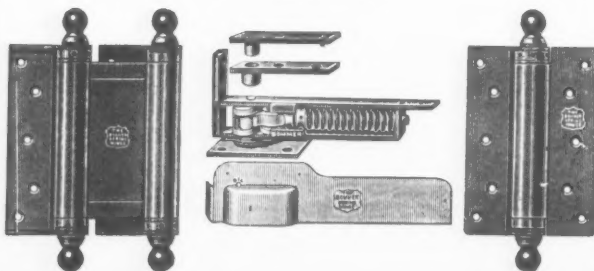
And now he is a happy man
with every comfort blessed—
It pays to take that "Ad's" advice—
be wise

"BOMMER SPRING HINGES ARE THE BEST"



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